DOCUMENT RESUME

ED 432 077 EC 307 279

AUTHOR	Goodman, Laura, Ed.
TITLE	Understanding Our Gifted, 1998.
ISSN	ISSN-1040-1350
PUB DATE	1998-00-00
NOTE	146p.; For 1997 issues, see EC 307 278.
AVAILABLE FROM	Open Space Communications, Inc., P.O. Box 18268, Boulder, CO 80308-8268; Tel: 800-494-6178 (Toll Free); Tel: 303-545-6505; Fax: 303-444-7020 ($35 for 1 year, institutions $45).
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	Understanding Our Gifted; v10 n1-4 Fall 1997-Sum 1998
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	*Curriculum; Elementary Secondary Education; *Gifted; *Intelligence; *School Choice; Special Schools; *Student Development; *Student Evaluation; Student Needs; Talent

ABSTRACT

This document consists of the four quarterly issues of the journal "Understanding Our gifted" published during 1998. Each issue of the journal generally has a single theme in the education of gifted and talented children around which all the articles are focused. The themes of these four issues are, respectively, "Educational Options," "Intelligence Revisited," "Asynchrony," and "Curriculum". Major articles are: "Unraveling a Mystery of Modern Schooling" (John Taylor Gatto); "School for Gifted Students: Refuge or Reformatory" (F. Richard Olenchak); "Educating for Identity: Developmental Attention and Personalized Learning at Roeper School" (Lorene Porter); "A Public School Option" (Abigail Marshall); "University School at the University of Tulsa" (Pat Hollingsworth); "The Center for Education Enrichment: Providing a Model for Supplemented Homeschooling" (Marlo Rice and Annette Revel); "Getting Your Child the Right Education: Tips for Effective Advocacy" (Hope Sargeant); "Issues in Assessing the Highly Gifted" (Miraca U. M. Gross); "Assessing Gifted Children" (Julia Osborn); "The Nature of Intelligence" (Barbara Carroll); "A Boy, an Island and His Journey" (Neal Brodsky); "Creative Ventures...Thinking about Thinking, Creatively: Using Quotations with Gifted Students" (Jerry Flack); "The Balance Uneasy: Asynchronous Development in Gifted Children" (Younghee M. Kim and LeoNora M. Cohen); "Asynchrony Personified" (Laura Goodman); "Asynchrony and the Gifted" (Jane Piirto); "Giftedness: The Asynchrony Syndrome" (Michael Rios); "Carousel...Does One Size Ever Fit All? A Case for Individualizing Curricula for Gifted and Talented Students" (F. Richard Olenchak); "Curricular Intervention for Gifted: Keys to Design" (Carole Ruth Harris); "Teaching and Learning for Academic Survivability" (Jay A. McIntire and Jonathon A. Plucker); "Problem-Based Learning and Gifted Students" (Jill Burruss); "Carousel...Perforating the Myth: Gifted Education Is Elitist" (Hope Sargeant); "Above and Beyond...Advocating for the Curriculum Needs of Gifted Students" (Susan Winebrenner); and "Gifted CDs: The Best Titles for Your Children" (Gregory C. Pattridge). (DB)

UNDERSTANDING OUR GIFTED

VOLUME 10, ISSUES 1-4

FALL 1997-SUMMER 1998

ED 432 077

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Understanding Our Gifted (ISSN 1040-1350) is published quarterly by **Open Space Communications, Inc.**, P.O. Box 18268, Boulder, CO 80308-8268. Subscriptions are $35 for 1 year. Institutions $45. International subscriptions are $47 U.S. funds; International institutions $57. Back issues $8; International $10. Third class postage paid at Boulder, CO. Subscription inquiries should be sent to the publishing office. For subscription address changes, send mailing label along with new address to ***Understanding Our Gifted***, 1900 Folsom, Suite 108, Boulder, CO 80302, eight weeks before moving. Material in ***Understanding Our Gifted*** may be copied for personal use only. No material may be reproduced for publication without written permission. Appropriate credit must be given. Copyright 1996, **Open Space Communications, Inc.** All rights reserved. (303)444-7020/FAX (303)545-6505, 1-800-494-6178.

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Focus: Educational Options

Between the Lines

I recently visited a wonderful outdoor museum with original old buildings, among them a fascinating one-room school of the 1890's. The plaque on the door described it as a place where one teacher taught all ages, grades and subjects.

I got to thinking that the theories and ideas we so enthusiastically espouse today were actually conceived in those days and in that tiny board-and-batten structure. Without identifying what they did as an educational strategy, the one-room teachers of old customized lessons to fit each individual student.

In so many ways, that little schoolhouse was the infrastructure of education, with elastic rather than fixed dimensions. The sole teacher was a facilitator of whatever worked for each child, providing attention for those who needed it, expanding the space for those who could go beyond, in the process building a community of children, parents and school.

In this issue, the 10th year of publication for *Understanding Our Gifted*, our writers range from one end of the educational continuum to the other, even running to a debate of sorts in the lead articles. Given the limitations of space, we've tried to provide as many different looks as possible at what people and programs are offering our gifted youth in the way of education. Whatever your choice for the children you raise and the students you teach — public, private, home education or a synthesis of selections — you can incorporate those same essential elements of the original little schoolhouse: flexibility, common sense and community cohesiveness. We have so many more options than the folks of a century ago, and we have the wherewithal to customize plans that are dynamic, growing and changing with our children and their needs.

In a recent Special Report, *Time Magazine* (October 27, 1997) asked, "What makes a good school?" The response: "A good school...is run by someone with vision, passion and compassion. A good school has teachers who still enjoy the challenge...A good school prepares its students...for the world out there" (p.64).

What is your approach to the education of gifted children? Where do you stand philosophically? What works, what could? Is an ideal school or educational setting possible, given what we know of the vastly individual nature of gifted children and the state of educating them today? We'd be interested to hear your ideas and add them to this important discussion. ❖

D.K.

Options

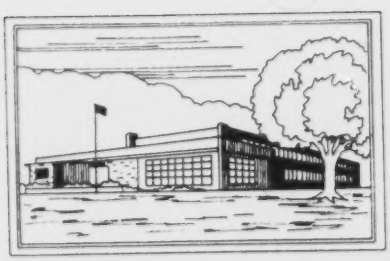
Unraveling a Mystery of Modern Schooling

John Taylor Gatto

One of the mysteries of modern American schooling is that the institution refuses to do what parents ask of it, and we have no idea why this is happening.

At one time in this nation's past, America was the greatest land of readers the world had ever seen. Before the 20th century and right through to the Great Depression, this country had laborers and coal-miners devouring books almost like collegians. As with computer literacy today, school had nothing to do with this facility — reading was a national sport in a land where opportunity lurked everywhere. What happened to so significantly reduce the ranks of these legions of American readers? And what has happened in the educating of American children that has present-day parents clamoring against its schools and its system of schooling in general? I suggest that answers to these questions are inextricably tied together.

Speaking in 1859, Abraham Lincoln referred to Mudsill Theory — the negative social and political thinking of the time which dismissed as worthless those families who lived in simple cabins with baked mud doorsills — as a sure detriment to all Americans, their society and its progress (Shaw, 1950). A serious consequence of this thinking was to promulgate the educational belief that many, many boys and girls in this country were too stupid to learn much. When Lincoln attacked the pernicious effect of induced class division on America, citing Mudsill Theory in particular, he could not have known that this negative thinking would go on to help drive the visible action of what mass, or forced, schooling has become.



At the beginning of the 20th century, 25% of United States children went beyond elementary school. Schooling did not control the economy, and there were many avenues to work. The curriculum and standards of an average high school at that time would put a good college to shame today. This traditional structure served Americans well. Then something happened.

In 1905, Ellwood "Pops" Cubberly, who would go on to become dean of teacher education at Stanford and the principal house historian of schooling during the first half of the century, suggested that schools were to be factories "in which raw products, children, are to be shaped and fashioned into (finished) products....They are to be manufactured like nails, and the specifications for manufacturing will come from government and industry."

Now I strongly disagree with this assessment of children and am dumbfounded by the educational implications of this line of thought. And I know I'm not alone in these feelings.

In my view, the modern system of mass schooling is based upon a deeply negative assessment of human nature like Cubberly's above, like that inherent in Mudsill Theory and others; it seems to be a quasi-religious belief that ordinary children cannot accomplish much, will not learn unless coerced or bribed, should be isolated from parent and community influence and will inevitably work in large employment pyramids estab-

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***John Taylor Gatto** was New York State Teacher of the Year in 1991 and New York City Teacher of the Year in 1989, 1990 and 1991. He is the author of Dumbing Us Down, The Exhausted School and The Empty Child.*

A Mystery

Continued

lished by government, corporation, institution and professional associations. These postulates are central to the geometry of government schooling where I worked for 30 years as a classroom teacher. From what I saw and experienced, I would echo the words of Brown University sociologist Frank Ward, who suggested back in 1906 when police were first being used to bring children to school, that teachers were not working for Mom and Dad but for the State. The result desired by the State, he said, is wholly different (Commanger, 1967).

This is America, land of entrepreneurs and financial enterprisers, and it is my contention that it is truly economic leadership that drives mass schooling. This is why mass schooling is always *forced* schooling, and there are vital lessons children cannot be permitted to ignore. Tycoons correctly deduced from the Civil War experience of the last century and from the very organized Prussian pioneering movement that the easiest way to get people to consume (not produce), to be employees (not have independent livelihoods) and to be politically compliant or, at the least, indifferent (instead of knowledgeable and skilled advocates of some independent point of view) was to hold children and dumb them down. It wasn't personal. It wasn't even sinister. It was just good business. I maintain that forced schooling cannot be reformed until we all recognize it as a nearly perfect social institution already. It might not do what Mom and Dad want, but it does precisely what it was set up to do.

A shorthand for the tragedy of forced schooling can be condensed to the statement that the pseudo-science of psychology has never actually been able to figure out *what* children are. Or even why they are alive. It's whatever the rich and powerful think at the moment that we can count on as being the scientific opinion of those professional classes who depend on the rich and powerful for their next meal. John Locke said children were blank slates (Niddich, 1975), but they are not; La Mettrie during the French Enlightenment maintained they were machines (1865), but they are not; Froebel, inventor of kindergarten, likened them to vegetables (1885), but they are not that either; they are not organic systems of stimulus and response as Wundt averred (1897), and they are not even what the glamorous crop of true-believing utopians we call systems thinkers suggests: mystically harmonious microsystems interlocking with grand macro systems in a universal dance of atomic forces.

Every great field theory of human nature has caused havoc when used as a justification for school experimentation, and each of these suppositions leads to frightfully oppressive practice when translated into pedagogy. Consider Ross, who wrote that "plans are underway to replace community, family, and church with propaganda, education, and mass media...The role of schoolmaster is to collect little plastic lumps of human dough from private households and shape them according to specifications laid down [by the State])" (1901). Well, any mother can tell you that people are *not* little plastic lumps of dough, and this shaking loose from family, church and community by schoolmasters has ruined a lot of lives already and promises to ruin many more until we can stop it.

There in a nutshell you have the problem of modern schooling. It rests on false premises. It simply is not possible to replace community, family, church, synagogue or mosque with propaganda, schools and depersonalized electronic gadgetry.

In the second decade of the 20th century, Thorndike of Columbia University, central figure in the rise of standardized testing, wrote that scientific schooling would establish the pre-conditions to permit "selective breeding before the masses take things into their own hands" (1927). He also claimed that ranks produced by national testing could be used, after the public had become accustomed to and no longer questioned them, as a basis to assign work, licenses to marry, the right to hold public office and, ultimately, as a "fair" way to grant tickets to reproduce. Another architect of universal testing, Goddard, head of the psychology department at Princeton, wrote that scientific schooling was all about "the perfect organization of the hive" (1920). According to Goddard, standardized testing was a way to make the inferior recognize their own inferiority, like wearing a dunce cap, and the humiliation would constrain breeding prospects in a variety of ways. Here, again, is Mudsill Theory mixed with more latter-day eugenics.

I submit that forced schooling has produced some horrifying effects in about a century of operation, but I know the question remains: Isn't this really an accident? Who can believe a project is under way so inherently wasteful of common human genius, talent and affection?

Let's go back to considering our nation of readers and what happened to them. Between 1930 and 1941, literacy among military volunteers was 98% and fell only slightly to 96% for 18 million draftees tested between 1941 and

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A Mystery

Continued

1944 (Sticht & Armstrong, 1994; Sticht, 1995). Volunteer or conscript, Americans could read. When this wartime generation mustered out, a huge number of soldiers seized the opportunity to become college credentialed through the GI Bill, half from households below the poverty line, two thirds without a high school diploma. Only a small percentage of these veterans-turned-scholars had trouble with college work, and I suggest the reason for their general success was because they could read. I mean, they could *really* read.

Six years later, millions more were tested for Korea, a group much better schooled than the first. But, surprisingly, this generation could not read, write, count, speak or think as well. Illiteracy had climbed well over 400%. Comparing Army classification tests from WWII with Korean War results, they knew long before the public did that America was losing its ability to read. Certainly, by 1950 the Defense Department realized something big was up — if it didn't know before. Ten years later, the Vietnam War began. When *it* ended, the number of men turned away by the Army for inability to read safety manuals, interpret road signs, translate verbal orders into appropriate behavior — in everyday language, the number of functional illiterates — reached 27% of the draft pool, a 675% increase over the men of World War II (Sticht, 1995). These ignorant men had been intensely schooled in the 1950s and 1960s and had more "scientific schooling" than any generation in history.

Nor was the decline over. In 1993 the United States Department of Education concluded that half the adult population could not read difficult material (Survey of Adult Literacy, 1994), and three years later the American Management Association added that 33% of college graduates could not read or calculate well enough to perform the work they sought (Koretz, 1996). In that same year, the wealthiest state in America — California — tied for last in reading in the nation.

In a literate society, the illiterate don't necessarily starve, some do quite well economically, but they are frozen out of decision making. Leadership finds no opposition in a textless, nonverbal mass.

> ***"School works the way it does, I believe, because in its theory of human nature most people are of little worth, or worthless, or even of negative worth."***

The great rise of forced schooling was heralded by its engineers as the end of crime and the economic leveler among various groups in the body politic. Crimes of all sorts were between 11 and 23 times as prevalent after the children were drained from the living community than they were before (Lynch, 1989; Ferdinand, 1980; Cogan, 1970; Sellin, 1964). As for the dispersal of wealth, exactly the opposite of the prediction occurred: Wealth is 2 1/2 times more concentrated at century's end than it was at the beginning.

Since the connection between illiteracy and violent crime is overwhelmingly positive in a literate society, crime doubled and redoubled after WWII, particularly among the most relentlessly dumbed down crowd. This only reinforced some social hypotheses that these people were evolutionary dead ends (Hughes, 1949). But in all this, crime didn't come first, illiteracy did.

I know there are other, gentler ways to look at the development of forced schooling in America and other softer explanations for why it commits the follies it does. I know, too, from my 30 long years inside the machinery of factory schooling that many brave, resolute souls do the best they can to make the experience on balance of value to the young people in their charge. I even know that there are villages and perhaps urban neighborhoods which have resisted the remorseless logic of Mudsillism. But if what I have said here is not the totality of the truth, it is truth nonetheless. The ugly facts demand an explanation.

I don't mean to sound inflammatory but it looks as if government schooling has made people dumber, not brighter; made families weaker, not stronger; replaced religion with science (that looks more and more like religion the harder you stare at it); has lowered incomes substantially; set the class structure in stone by dividing all children in early youth into classes based largely on family income; and it has acted as handmaiden to a shocking concentration of power and wealth in the hands of a few. It looks from where I stand as if Goddard's (1920) hope that school could create the organized hive society is within striking distance of becoming fact.

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A Mystery

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When we deprive people, including young people, of the obligation of self-control and self-direction they become irresponsible. What gave special power to the American common people right through the end of the 19th century was the general absence of any effective police power. Congregational and even "crowd" action became more wise and responsible the longer it was exercised. The immense growth of state policing did not lead to less crime but to so much *more* it can only be measured in multiple *squarings* of the original figure. As people were trusted less they became less trustworthy. State schooling is best seen as an extension of the policing power into the *minds* of the young and, by connecting it to the economy, into the minds of all of us everlastingly.

School works the way it does, I believe, because in its theory of human nature most people are of little worth, or worthless, or even of negative worth. This Mudsill Theory thinking translates itself into the routines of schooling, even the routines of "gifted and talented" schooling, because the vision of the future its powerful proponents see is a highly selective one. Everything is being arranged, even the common workplace, to generally discourage many, to encourage certain attitudes toward relative value, to discourage other values. The entire organization of planetary life is being fit into the rat cage of behavioral psychology; the cage is larger, but its routines are familiar.

By homeschooling our own children, if we can, by understanding that money and real education have little to do with each other, by clarifying for ourselves and others the distinction between schooling and merit, by *resisting* in many small ways: voting down school bond bills, repudiating school consolidations, scoffing at the transparent purpose of "national" curriculum, standards, teaching credentials or goals, we will be taking arms against this thing. By thinking for ourselves and teaching our children or relatives to think for themselves, we will reawaken the Old Yankee skepticism, which is our heritage as Americans, that challenges the foolish belief that experts have any particular wisdom. Knowledge they have, yes, and that is what we pay them for; but wisdom, as Jefferson wisely divined, is most often found in ordinary people looking out for their children, their traditions and their God (Koch & Pendan, 1944). In wanting to help and do what's right for our children, if we as parents and citizens follow our own stars and refuse to be intimidated by this institution and the government that runs it, we will be making a grand beginning towards the real work that needs to be done. ❖

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Options

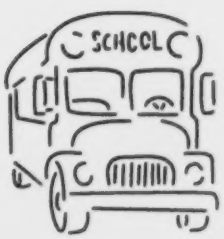
School for Gifted Students: Refuge or Reformatory?

F. Richard Olenchak

He who opens a school door, closes a prison.
Victor Hugo

Sending young people to school has been an accepted component of civilized society for centuries. Today, as never before, the value of school — both public and private — has been questioned by parents worried about safety, appropriateness of curricula and quality of instruction; the ever-growing home school movement is demonstrative of the current trend to challenge school as a critical social pillar.

Certainly, as headlines proliferate about debatable school instructional tactics and watered-down curricula, parents of gifted children can justifiably become suspicious of the school's value. Further, recent studies of homeschooling alternatives have presented defensible data that young people educated at home present significantly higher standardized test scores than their counterparts in both private and public schools. Homeschooled youngsters out-perform the traditional populations of students by 37 percentile points and 30 percentile points on the Iowa Test of Basic Skills and the Stanford Achievement Test respectively (Ray, 1997). Moreover, Ray found that homeschooled children were involved in a weekly average of 5.2 extracurricular activities outside the home, indicative that the homeschooled population of students is not the isolated group they are often said to be. Prior to parents resigning their jobs and resorting to homeschooling or other educational alternatives, there are several issues about gifted students to ponder.



1. Consider what gifted students typically need in order to identify and nurture their talents. Instructionally and in curriculum, such pupils require pacing, depth, breadth and coverage that is different from techniques and content extended to less able students (Gallagher & Gallagher, 1994; Renzulli, 1994; Schiever & Maker, 1997). Moreover, because of a set of particular psychosocial needs associated with gifted students, they demand specialized counseling activities to promote social-emotional development in order to maximize their talents (Rimm, 1994; Silverman, 1993).

While the majority of schools may barely accommodate this wide range of cognitive and affective needs among the gifted student population, is it possible for homeschooling alternatives to do so? The advantages of one-to-one or small-group instruction are well documented (Berliner & Biddle, 1995); surely, home environments with willing and careful parents can provide closer attention and supervision. The personalized instruction and tailored curricula necessary for development of talent are certainly more feasible in such settings, but will access to expertise — at a level of sophistication required for stimulating learning beyond that tested by regimented standardized tests — be possible? In some cases where parental aptitudes and interests are somewhat parallel to the desires and needs of the gifted child, homeschooling can fulfill this demand. Leah Adler, an especially creative parent who was interested in people and capturing life's events through art and photography, was able to serve as an early model for her son, Stephen Spielberg (McBride,

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1997), but how frequently will such a match occur? How well can parents provide a wide range of exploratory opportunities that cross varying disciplines and account for diverse interests? Moreover, how many parents possess the skills to provide not only stimulating curricula but also appropriate counseling beyond more than a superficial level? It is one thing to teach youngsters facts useful for performing well on standardized tests but quite another to nurture their individual talents; few homes possess the skills and materials necessary for talent development of gifted students. Though a case can be made for utilizing community resources beyond the home, it is unlikely such efforts will be sustained over time without special compensation. Quite simply, despite presidential promotion of community-wide volunteerism in the rearing of our nation's children, long-term relationships that are required for nurturing the talents of gifted children are unlikely unless parents are prepared to pay for such tutelage. What if the parents cannot monetarily afford a wide variety of exploratory opportunities and skill development activities?

2. Consider the family lives of eminent adults. Psychology and education of gifted students have learned a great deal about their development by examining the homes and families of exceptionally successful adults. Studies reveal that eminent adults have been reared amidst encouragement, stimulation and direct instruction from a wide variety of mentors (Simonton, 1997). Perhaps more critical, most were not only permitted but inspired by their mentors — whether teachers, parents or others — to question conventions openly and with perseverance (Bloom, 1985; Getzels & Jackson, 1962; Ochse, 1990; Simonton, 1987; Sloane, 1985; Walberg, 1982; Walberg & Stariha, 1992). Although there exist parents who are comfortable with their children occasionally and vociferously challenging rules in the home, how many can easily create an environment where such receptivity to new ideas about parental authority dominates? In the late 1990s, a period in which many parents are all but consumed with work outside their homes (e.g., industrial and business downsizing, as well as other traits associated with severe marketplace competition), how many can cope with an iconoclastic child whose unconventionality they reinforce? Further, how many mentors external to the home feel at ease with children who seem dogged about challenging adult roles, knowledge and experience?

Such potential conflicts between children and parents or between children and non-parent mentors parallel some of the traumatic events repeatedly recorded in the lives of eminent persons (Berrington, 1974; Feldman & Goldsmith, 1986; Goertzel & Goertzel, 1962; Goertzel, Goertzel, & Goertzel, 1978; Simonton, 1994). However, any advantages from troubling childhood events appear to vary by domain of achievement (artistic talent apparently requiring greater childhood turmoil than does scientific creativity [Berry, 1981; Simonton, 1997]). Yet, we also know that many distinguished persons achieved eminence without having to endure numerous childhood problems (Simonton, 1994). Moreover, gifted children who must handle family dysfunction or parental loss frequently are unable to cope successfully, with numerous incidents of resulting suicidal depression and juvenile delinquency (Andreasen, 1987; Eisenstadt, Haynal, Rentchnick, &DeSenarclens, 1989; Jamison, 1989). How, then, is one to discern the fine line differentiating the optimal amount of conflict and trauma for nurturing talent from the amount that is too much?

3. Consider the effects of schooling on gifted persons who have attained life success. One of the reasons both private and public schools are subjected to recurrent attack is that school success seldom begets adult professional distinction; many adult geniuses performed poorly in school (Cohen, 1984; McClelland, 1973). In fact, Simonton (1984) found that higher levels of education were sometimes disadvantageous, though certain professions require advanced levels of schooling (e.g., medicine, law, psychology). Aside from such fields of human endeavor, formal schooling likely has a less crucial role. Artistic creators, innovative scientists and others who excel because of their unconformity probably have little to gain from traditional education *after* they have secured "enough formal training to acquire certain basic knowledge and skills, such as the ability to write well and to carry on an informed conversation... whatever the details, we must recall that it usually takes about 10 years of intense study to master the materials of a domain" (Simonton, 1997, pp. 344-345). Consequently, though formal schooling may well be preoccupied with information dissemination and basic skill acquisition, it also expediently provides training requisite for optimizing talent in gifted students. The real issue then is not to eliminate traditional schooling altogether but to determine, on an individual student basis, when to augment and then gradually replace basic skill acquisition with activities aimed at developing talent.

Mentoring rises to the forefront of consideration, for it is through the

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work with professional exemplars that gifted students are likely to identify the integration of basic education with training required for optimizing domain-specific abilities. Mentoring, a less formal type of education than schooling, has been shown consistently to be a pivotal factor in the development of talent (Beck, 1989; Bloom, 1985; Feldman & Goldsmith, 1986; Wright & Borland, 1992). Yet, mentoring can be detrimental if mentors seek only to duplicate themselves through their students or if mentors have passed their own peak career development and are perhaps less than receptive to new ideas. Although use of multiple mentors can help offset these potential drawbacks, the importance of matching students with their adult mentors cannot be overstated. Do parents who are engaged with homeschooling their gifted child have the resources of time, energy, and money to provide basic training necessary for life success regardless of their child's talent interests, as well as to seek a collection of appropriate mentors outside the home? If the child has not been exposed to a sufficiently varied assortment of vocational and avocational options, how will parents know from which domains to select mentors? Keeping in mind that relatively few eminent persons clearly distinguished their areas of life interest at an early age as prodigies, can parents provide exploration of fields that is adequately wide for determination of the child's real interests?

Saving the Baby

To abandon schools in favor of alternatives for educating gifted students is tantamount to casting away the baby with the bath water. Without question, there is a lot wrong with the treatment of gifted students by traditional educational institutions; critics abound, and horror tales about instructional mistreatment, inappropriate curriculum and general discrimination are readily available (Archambault, Westberg, Brown, Hallmark, Zhang, & Emmons, 1993; Delisle, 1984, 1992; Kulik & Kulik, 1987; Robinson, 1991; Silverman, 1995; Sosniak, 1988; Westberg, Archambault, Dobyns, & Slavin, 1993). Nonetheless, there also are numerous studies indicative of successful adaptations that schools can, in most cases, make easily to enhance services for gifted students.

Renzulli and Reis (1997) cite more than 20 empirical investigations of the Schoolwide Enrichment Model (SEM) across a number of effectiveness factors, including perceptions of parents and professionals, student creative production, advanced skill acquisition in talent domains, creativity, personal and social development and remedying underachievement. In every case, SEM was found to have a marked, positive impact on the development of talent in gifted students and served to identify and nurture talents and gifts in students who otherwise may well have been overlooked for talented and gifted services in schools.

Benbow and several colleagues (e.g., 1983, 1990, 1991, 1994) have, over the years, subjected their rapid curricular acceleration program to many examinations and have consistently found that, by adjusting curricular and instructional pacing, schools can stimulate and promote a range of academic talents in gifted students. By incorporating a specific step-by-step system for ensuring individualization of learning as well as by providing access to content experts, accelerated programs can be implemented in school settings.

The literature examining effects of specialized summer and augmentative school programs and practices was examined by Olsjewski-Kubilius (1997). She found that, in combination with thoughtfully tailored curriculum and instruction in school, such programming provides positive long-term effects for gifted students. This meta-analysis corroborated the results obtained on specialized schools for gifted youth (Stanley,1987), ability grouping (Kulik, 1992; Rogers, 1991), problem finding-problem solving activities (Rimm & Olenchak, 1993; Stepien, Gallagher, & Workman, 1993) and affective development programs (Colangelo & Peterson, 1993).

The point is that more than an adequate research foundation exists for pointing schools toward implementation of curricular and instructional alterations known to improve educational accommodations for gifted students. Nevertheless, specialized efforts for gifted youngsters seem constantly to come under attack as often as do schools themselves, with American society continuing to grapple with the seeming incongruities between national goals emphasizing equity on one hand and excellence on the other. Too often, schools fall victim to this controversy, yet they also too frequently de-emphasize giftedness in the academic realm while pandering to it in the athletic domains. How can schools defend ability grouping and specialized instruction for the most able athletes yet, in the name of equality, turn away from special attention for other kinds of gifts? It is no wonder that parents of cognitively gifted children are among those who regularly remove their children from traditional schools in favor of home schooling (Ray, 1997). Although leaving the schools, both public and private, is one option available to gifted children and their

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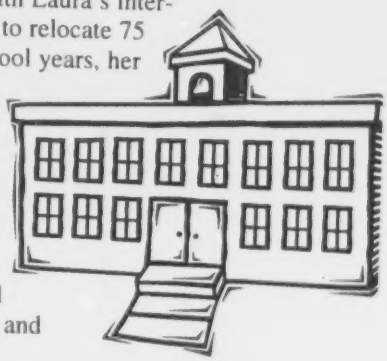
parents, perhaps fleeing is not the best choice for every gifted student. Do schools have little value for gifted youth?

Determining Educational Value

As with all aspects of life in a democracy, the determination of educational value amounts to an interaction between personal needs and personal desires. How often have we wondered why a neighbor elects to spend a small fortune on a pair of jet skis while resolutely decrying additional funds for the town library? In a truly free system, one's values are just that: uniquely individualized. Though the degree of free choice available to parents for educating their children is more limited than one's decision to buy jet skis instead of increasing library allocations, there is nonetheless choice available. Deciding the value of school must be a task undertaken at the most personal of levels, and for parents of gifted students, this decision may be one of the most difficult ever to be made. To examine educational choice, contemplate two juxtaposed cases, that of Laura and that of Leo.

By age 2, Laura was speaking in paragraphs and by age 3 was reading at approximately a 3rd-grade level. School was at first entertainingly novel for her, but it quickly dissolved into a routine of unstimulating confinement. Mindful of her parents firm hand, she persevered regardless until high school when it became obvious that, unless Laura were provided a challenging program, she might as well quit school, obtain her graduate equivalency diploma, and proceed directly to college. Laura's parents decided that, despite her great intellectual ability, they wanted her to have peers not only of similar ability but also of similar age.

Searching hard, they located a public magnet school for gifted students that catered specifically to students with Laura's interests and needs. While the family had to relocate 75 miles from home for Laura's high school years, her parents were convinced that she needed school experiences in order to understand how to work with others. Once there, she prospered academically and socially as never before, the curriculum, instruction, advising and peer grouping highly appropriate. Today, Laura is described by adults and peers alike as successful and happy.



In contrast, Leo, whose abilities were as advanced as Laura's at an early age, remained in public school only for several years. Due to his increasing boredom-related misbehavior at school, his parents chose to educate him at home from 8th grade until he had completed the state high school curriculum two years early. Though this presented a bit of a financial hardship in that Leo's mother had to resign from her professional position, his parents were sure it was the right decision. With support from a mentor he had come to know in scouts, Leo continued activities outside his home and is described by all in his life as happy and successful.

Both Leo and Laura seemingly have emerged successfully from their school years, yet one was educated at home and the other in a school. Why? In both cases, each child had the good fortune to have been born to families with genuinely interested and caring parents. Laura's parents uprooted their lives to accommodate their daughter's educational needs, while Leo's parents chose financial curtailments to satisfy their son's demands for learning. Had each of these young people been born to homes with less than concerned parents, what might have transpired?

Was one decision better than another? Given that both gifted youngsters have performed well in all regards thus far, it would appear that the decision made in each case was *a* correct one — not necessarily *the* correct one. What if Laura's parents had elected to teach her at home and Leo's parents had opted to relocate to take advantage of an accommodating school? Though we cannot be certain, chances are reasonably strong the results would have been the same for both students.

The value of school can only be ascertained based on a comprehensive assessment of all of the variables confronting the student as well as the family. To propose the elimination of schools for gifted students is as contrary to the notion of democratic choice as it would be to propose the replacement of shopping malls with catalogs to serve consumers' purchasing needs. While homeschooling and other educational alternatives should be available to gifted students and their parents, needs are individualized and, as such, necessitate a variety of possible solutions, among them schools.

Though inventive, persistent parents can arrange similar experiences — as did Leo's, non-school educational alternatives require a degree of commitment from parents that, in this day of single-parent families and neigh-

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borhoods of questionable safety, may not be feasible. Most assuredly schools must be taught how to provide appropriately for their gifted student populations, but schools that do so — as the one in Laura's case — can most expediently provide subject exploration, advanced skill training and forums for creative productive behavior. The school that cares more about equalizing everything is likely to be a reformatory for its gifted students, but the school that is sincerely dedicated to the identification and development of talent will be a refuge. ❖

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Options

Educating for Identity: Developmental Attention and Personalized Learning at Roeper School

Lorene Porter

At Roeper, which became a school specifically for the gifted in 1956, our aim is to assist students to achieve academic excellence, sustain their curiosity and creativity, know themselves well and build a commitment to the community's well-being.

Developmental Issues

Around our campus, we're often heard to say, "The best way to help someone become a sturdy 37 year old is to help him be a 7 year old when he's 7 and a 17 year old when he's 17."

Developmental understandings inform us and contribute to the nature of play, experiential activities and the informal atmosphere of Lower School classrooms. Responses to developmental differences are played out in how we teach academics, physical education and the arts, as well as in the amount of choice offered to students in these areas as they move through Stages I-IV. This grouping of children by two-year stages (Stage I: ages 3-5, II: ages 5-7, III: ages 7-9, IV: ages 9-11) itself reflects what we believe about developmental changes in children.

Developmental appropriateness is important as well, as faculty responds often and deeply to children's needs for relaxation, friendship-building and conflict resolution. We hope we not only understand the developmental differences between a 5 year old and a 10 year old, but we wish to *respect* those differences in our expectations of and our responses to each child.

Knowledge of asynchronous development means a great deal to us. We see the 3 year old who is a self-taught reader struggling with shoes and socks. While it is difficult and complex, it is essential that we respond with understanding to the 6 year old who cries uncontrollably when his science partner "isn't doing it right! The teacher said we should only write observations, not inferences! Inferences come next!"

Asynchronous development is not merely a technical, measurable difference between intellectual and personal-social or psychomotor development. It is a highly charged, emotional component of gifted children, and faculty's empathic educational responses make a huge difference in the lives of these children.

Personalized Education

We're watching M., at age 8 now in her first year of Stage IV. Her adjustment 4 years ago when she was moved from Stage I to II midyear was viewed as a good one. Our concerns resurfaced when considering the move to Stage III and a good portion of her first year in the new stage did indicate anxiety. Her teachers' response to both her young age and her abilities, her parents' insights, her own need to understand herself and master her environment, along with the manner in which teachers helped classmates understand the nature of her person, were very important. These account for her own sense of readiness for and current sturdiness in Stage IV.

Personalized education is a hallmark of the Roeper School, but this does

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Roeper School

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not mean that acceleration is a singular response to differences. Faculty groups and re-groups for skill building, provides individual activities and designs group activities for intellectual stimulation and personal growth. Our teachers provide choice of learning activities, and they acknowledge the variety of ways students process these experiences.

Teachers are supported in their efforts to personalize by student-teacher ratios. Ratios range typically from 5:1 to 12:1.

The structure and schedule of the Lower School also support teachers' efforts to personalize. An array of both required and elective special classes (French, computer, library/literature, science, art, music, dance, physical education) respond to diverse interests and abilities. Flexibility is important here. For example, a Stage III student may elect a Stage IV special class. (C. will never lose his early enthusiasm for Gilbert and Sullivan, in part because, even though he was considerably younger, he was able to participate with our older students in their production of *Pirates of Penzance*.)

Emotional Components of Giftedness

Education tries to reach its goals by creating strategies of approach rather than by building channels of relationships. The inner agenda, the Soul or Self, are intangibles which are not as amenable to research as they are to observation and empathy. (Roeper, 1996)

"Channels of relationship" ... "observation and empathy"... These are crucial if we are to sustain gifted children's motivation to act on their inner agendas. Gifted students are often intense, perfectionistic. Their personality styles include a deep need to understand their world, to find personal meaning. They wish to master their world, to have an impact on it, to create new worlds of play, of language, new worlds of music and math and new answers to problems of unfairness and misery.

Bullying by other children and misunderstandings of his thoughtful, reflective processing style, as well as his imaginational intensity brought J. to us "wounded." His choice of clothing and hairstyle were observed, but they were not ridiculed nor were there efforts to "correct" these. After two months his mother reported that J. was beginning to be rid of the nightmares that had plagued him, replaced by the "creative dreams" he had once enjoyed. After the school year ended and before the next fall's return, clothing choices changed and he asked that his hair be cut.

We clearly design certain strategies of approach in order to respond in developmentally appropriate ways and to personalize students' educational experiences. Indeed, we continue to design and redesign these as a matter of program improvement, but these would have little significant value to J. or to any of our students if those strategies of approach did not assist them to *know* themselves.

In Roeper's Lower School, each homeroom teacher considers herself her students' "counselor." When teachers feel their guidance along with parents' insights are insufficient, they draw on the expertise of our school counselor and/or outside experts. Additionally, our Specials teachers come to know our students in deep and meaningful ways. Conversations between staff informally and through formal staffings result in a collective best sense of each child.

We believe strongly as did our founders, Annemarie and George Roeper, that self motivation to develop one's talents and abilities comes from the inner need of the self to express itself. That motivation diminishes when the self is misunderstood, ignored or thwarted by a barrage of others' expectations. It is only when real relationships with students are established, when a student *is* understood, that his or her self is protected and freed to respond to the prepared learning possibilities. The energies of the child can be given over to sustaining and attaining academic, creative, physical, personal-social and moral growth.

Dabrowski described the evolution of a personality as "an autonomous intrapersonal process of sensing and then reaching for and becoming something (someone) larger and truer" (Nelson, 1989). We hope that our responsiveness to our gifted students' emotional needs provides a foundation for their evolution to become the very best they can be for themselves and others. ❖

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Options

A Public School Option

Abigail Marshall

A huge mural covers two outside walls of the public elementary school my daughter attends, painted by the children themselves. It is a modest attempt to depict the unique character of our school by illustrating its many events and activities. My son graduated from 8th grade last year, but his painted blue dolphin remains, cavorting in the waves over the inscription for "ocean's week."

My daughter, now in 4th grade, is still enthusiastically enrolled at the Laguna Salada Alternative School in Pacifica, California, a coastal community about 20 miles from San Francisco. Our school was created 26 years ago by parents who pictured a "family of families," a school-without-walls, where children followed their own inclinations in mixed-age classrooms. It has grown into a K-8 program with 210 children in eight classrooms. The school still focuses on providing individualized instruction, small group and cross-grade activities.

We are in a low-wealth district, where there is no funding for extras. But at our school, the kids go on field trips at least once a month, often for overnight adventures, and class days are filled with hands-on activities. This is made possible by our school's requirement that parents commit to working as classroom aides and help with other activities, including fundraising. All parents sign contracts promising to work at least 95 hours a year, adding more hours when additional siblings are enrolled.

Our school is not designed for gifted children; it is open to any child in the district, although its popularity makes it hard to get in. There is a sibling preference for enrollment, and remaining spaces are meted out by lottery. The school is not even particularly challenging academically but provides an atmosphere of enrichment for all, and thus it has been a place where each of my gifted children could thrive.

My two kids are quite different in their temperaments and talents. One was an early reader, the other is dyslexic. One is athletic and extroverted, the other introverted and aloof. One is eager to please the teacher, the other more inclined to question and challenge. But both have been accepted, respected and nurtured in the alternative school community.

When you take 100 sets of parents and decree that they must participate, and let this mix stew over the years, you get a kind of magic. People keep coming up with new ideas, the ideas get turned into traditions, the traditions get entrenched until they are expectations and, in the meantime, people keep coming up with more ideas. So we have a literature program, math lab, performing arts workshop, ocean's week, Civil War reenactment, overnight field trips and living history projects, plus the assorted picnics and camping trips that simply have become part of the school's culture.

These kids go on field trips all the time, sometimes to places you would expect: museums, cultural events, historical sites, nature preserves, working farms. And then they go on the special adventures, such as overnight trips spent aboard a turn-of-the-century sailing vessel or week-long trips spent hiking and learning at a national park.

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Public School

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When the kids are in class, their days are as likely to be spent on parent-initiated projects, theme days or cross-grade activities as on traditional classroom work. There is always at least one parent aide in each classroom, often as many as half a dozen. Parents who are talented artists and musicians lead projects in their chosen fields. Each classroom has an elected parent ombudsman who works on a daily basis with the teacher, a parent to arrange field trips, a parent to arrange and coordinate class projects, as well as a parent whose job it is to schedule other moms and dads to work as daily classroom aides.

For the teachers, there is a lot of extra work, with no extra pay. They must somehow manage to fit the district-mandated curriculum around our hectic schedule of activities. The kids call the teachers by their first names, and there are no letter grades. Our teachers vary in style and approach, but in order to maintain their sanity in this environment, each must have a large reservoir of energy, a flexible approach to learning and a good sense of humor.

Our school has a written commitment to providing "individualized" education, but there is no specific framework for implementing this. At times, to me, the school environment is maddening in its ability to keep my children occupied and stimulated, without actually providing any deep challenge. But since parent participation is the norm, it has been easy to develop a good working relationship with teachers and the school principal. I have nudged here and there, doing a little fine tuning, arranging for my son to do advanced work in math, for my daughter to work with older children for reading and language arts.

But as a parent in a cooperative setting, I was also much more aware of my obligations to all the children in the extended family our school represents. Working in the classroom, I have come to know and appreciate all the children and all they have to offer. I have also seen firsthand my own children's limitations. I look beyond the needs of my own kids, focusing instead on whichever group I am working with. I volunteered to help 7th graders in our math lab, partly because I wanted to provide more challenge to my math-whiz son. But my greatest pleasure came from working with the youngsters who struggled with math, sharing their joy as they grasped each new concept.

All parents share this collective commitment, no matter what the recognized abilities of their own children. Some of the ideas and offerings that parents have brought in are quite ambitious, far beyond typical grade-level fare. The beauty of hands-on participatory learning is that it can appeal to so many levels at once. (Even parents learn new things!) The individual abilities of the children may vary, but they're seldom apparent on a field trip to a museum, a farm or a historic site. Each child is learning with wide-open eyes; each wants a chance to see or touch or hear what is offered.

Cooperative schooling is not for everyone. It requires a lot of work, for one thing. But in the end, the children grow up with a strong sense of community, in a setting where everyone cares and everyone shares. ❖

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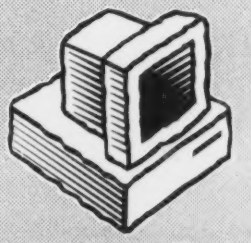

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Options

University School at the University of Tulsa

Pat Hollingsworth

Several years back, Craig's parents visited University School and were discussing it with him. His mom mentioned that the buildings certainly left something to be desired, and his dad promptly concurred. Craig immediately spoke up, saying, "But Mom, you know it's what goes on inside that counts." Fortunately, Craig's parents agreed, were able to look beyond the humble appearance of our old buildings and enrolled their son at our school.

This fall, University School moves to its new campus location. Designed by a local architect, the mother of two children at our school, this 30,000 square-foot, two-story building has 15 classrooms connected by wide corridors, four commons areas, lobby, library, gymnasium, stage and administrative offices and work areas. Numerous large windows surrounding the building offer views of the campus. As grand as all this is for us, we realize that it is basically superficial if there is not much more to it.

Academic Challenge

Often in the early grades, bright students face few academic challenges. Unfortunately this teaches them 1) that school is easy because they are smart, and 2) because they are smart, school work should always be easy for them. In short, they never learn to work hard, never learn to exert themselves for academic pursuits. They often have many wonderful ideas that are never developed or brought to closure.

At University School even our young students learn to work hard and also learn that the effort expended will be rewarded. At any one time, a visitor might see 3 year olds completing their "Must Do" work before selecting their own, intently focused kindergartners working quietly on their individualized math, 1st graders learning keyboarding before they play computer games and a 2nd grader completing his story before he goes out to play. We are of the old "vegetables-before-dessert" school.

Enaction Curriculum

Our curriculum, based on Enaction Theory, says that thinking is like running a video tape in your head. We try to help our students produce multiple sets of mental video tapes to run in their heads before they make important decisions. For example, prior to making an important decision, our students are taught to use productive thinking in order to imagine the many, varied and unusual consequences of the actions they are about to take. This helps students be less impulsive and more thoughtful in their decision making.

The Enaction Curriculum emphasizes the importance of students being actively involved in their learning and is used as a framework for curriculum development. The curriculum strongly encourages an interdisciplinary approach to learning. Teachers work together to find ways to cover concepts through a variety of disciplines, thus making the learning more meaningful and long lasting. For example, when we studied architecture, students learned about important buildings, the science involved in the structure, the art and music of the time period and the history of the era.

***Pat Hollingsworth** brings over 30 years teaching experience to her job as both Director and teacher at University School for Gifted Children, University of Tulsa, Oklahoma.*

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University School

Continued

Parent Support of Teachers and School

Parents at University School support the efforts of teachers as they teach responsibility toward school work and good behavior. If a child has had a problem in school either with behavior or classwork, parents are notified and home consequences are added to the school consequences already in place. The child knows that there is not going to be sympathy at home when such a note comes home. There are no easy outs for our students.

Often bright children quickly learn to manipulate their parents into getting them out of school problems. A few tears and a few words are all it takes. "The teacher is unfair. She doesn't like me. The work is boring." While our hearts may sympathize, our heads tell us even if these are somewhat valid complaints, it does our children little good to provide them with excuses not to do their work.

Our parents also know that sounding like an adult does not make a child into one. It does not mean that they don't listen, it just means that parents know that a child does not have the wisdom and experience that an adult has. University School parents know that adults must provide a united front in order for children to learn to take responsibility for their actions. Every human being has to learn to do some "boring" routine tasks.

Enduring Values

Students are taught to appreciate and value themselves and others and are taught the cardinal rules that you do not hurt yourself or others. One teacher has a banner in her classroom with Winston Churchill's wonderful, short graduation speech that says, "Never, never, never, never give up." It is a motto we try both to teach and to follow.

Problem Solving

Students are taught to make "I" statements to express their feelings. So it is not unusual to hear a kindergarten child yell out on the playground, "I don't like it when you call me mean names," which is often sufficient to solve the problem. If it is not, the two children involved are given the opportunity to spend more time together in order to work out their problems. Having to spend all recess or lunch together is a powerful motivator toward problem solving.

Service to the Community

The mission of University School is not only to serve its own students but also to serve the larger community. University School has provided this service to thousands of gifted students, their teachers and their parents. Each fall for over 10 years, University School has hosted a Parent and Teacher Institute. Well-known speakers on parenting and teaching from around the country have been part of this institute. In the winter, we hold the Winter Drama Festival at which students from this region bring their original plays to perform at the university. In the spring, we hold the Creative Producers' Convention. Students and adults bring their creative products to share at this annual celebration of imagination and invention. Each summer, we have programs that range from science, to math, to the arts. For three summers, we conducted teacher training for the United States Department of Education under a Javits grant.

It's What's Inside...

Our curriculum provides creative and challenging learning while also developing responsibility to self and others. We help parents and the community better understand the needs of gifted students. We are proud of our lovely facilities. The building is beautiful, but the message is still the same: it is what goes on *inside* that counts. ❖

Encyclopedia Britannica Online!

Are you frustrated by the high number of Internet sites that provide questionable information? The Encyclopedia Britannica has launched a new online service titled "Britannica Internet Guide" (BIG). BIG is a free guide to the highest quality Web sites on the Net. They include pointers to sites that provide highly accurate, reliable information. The review system is explained on their home page. This may be the "one-stop shopping" Web site that everyone has been looking for. URL: http://www.ebig.com/. S.B.

Options

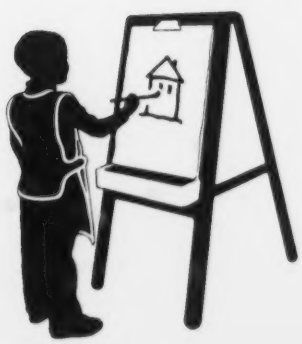
Center for Educational Enrichment: Providing a Model for Supplemented Homeschooling

Marlo Rice
Annette Revel

The Center for Education Enrichment was founded on the premise that no educational system is perfect for every child. For this reason, we provide a model for homeschooling that can meet the unusual needs of gifted children. Regardless of parents' reasons for assuming responsibility for their child's education, they all have the same general goal: assisting their child to be well educated, socially competent members of society. Even with the best of intentions, few seem to plan ahead for the child's inevitable return to a more structured environment. This may include returning to public or private school, entering college or eventually gaining employment. We help parents understand that a good homeschooling plan needs to include preparations for these transitions. Additionally, we find that in choosing homeschooling, many parents assume that they are thereby turning their backs on all other educational options. It is our goal to help parents keep all opportunities open.

When assisting homeschoolers, one of our first priorities is to objectively evaluate the child. Even if the child has been assessed by a professional in the past, parents may not have a clear picture of current abilities and needs. The child may fit into certain categories for intelligence and learning style, but those labels don't tell the whole story. A parent may have been told, "She's a gifted kinesthetic learner," but that same girl may also be dealing with an unknown writing disability. Each child is an individual with a unique set of characteristics. An asynchronous gifted child needs to be understood as clearly as possible so that all of his or her strengths and weaknesses can be addressed. A complete assessment should include:

- Cognitive Skills: overall estimated potential and patterns of strength and weakness within that potential
- Academic Skills: reading, mathematics, written expression and other academic subjects
- Visual, Sensory and Motor Skills: vision, visual-motor, sensory-motor and fine motor processing
- Hearing and Language Skills: auditory discrimination, auditory processing, memory, sequencing and receptive and expressive language
- Medical Conditions: attention deficits, anxiety, depression, allergies
- Social Skills: social maturity and social effectiveness



Consider the story of Sara, a 14-year-old homeschooled gifted girl, whose parents knew they needed to prepare her for college. Recognizing her asynchronous development, and not knowing how to help, they consulted the Center For Education Enrichment. The Center's director assessed Sara's abilities and skills and discovered she was years ahead in math and had relative weaknesses in reading and writing. The plan drawn up for Sara included a referral to the Special Education team at her local public high school, a private occupational therapist and a mentor. Sara and her mother then met with the school Special Education team, who confirmed the Center's findings and set up a service pattern for Sara. It included mother and daughter working with a Special Education teacher once a week to improve Sara's reading comprehension. Because she did not qualify for occupational therapy at the public school, a private therapist helped with written expression. And through a career shadowing pro-

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Marlo Rice *directs the Center for Education Enrichment, a private consulting agency. She is a School Psychologist with an extensive background in assessment and educational advocacy.*

Annette Revel *counsels and assesses gifted people of all ages at the Gifted Development Center and the Center for Education Enrichment in Colorado. She researches assessment and the social and emotional needs of the gifted.*

Model

Continued

gram, a local business person agreed to mentor Sara in mathematics. By making use of public, private and community resources, parents can customize a child's program to meet specific needs.

The Center for Education Enrichment begins its services to homeschoolers by providing an umbrella school. We hire certified teachers as tutors and offer help in finding resources and curriculum. We keep families up to date on homeschool requirements and help them comply with state and federal education guidelines. Following are some points we encourage parents to consider when homeschooling gifted children:

1. Most communities have or are in proximity to recreation centers, libraries, museums, youth centers and colleges. Some of these sites have existing classes, and we have also found that others will accommodate homeschooling families. We council parents not to be afraid to approach the people who run these centers and propose an idea that would be beneficial to their child.

2. We provide outreach programs and offer a wide variety of classes and educational opportunities. We also network with other educational agencies. Most are aimed at remedial classes or tutoring but some, like ours, also provide more advanced instruction and enrichment for gifted homeschooled children.

3. Many companies offer educational programs. Some even pay their employees to teach a class in the local community. If a company does not currently offer educational support, they can be approached with an idea. Many people are honored to be asked to teach something they know, especially to a small group of eager, gifted children. We encourage parents to start by exploring learning opportunities through their own employer. Also, some retail outlets offer classes. For example, some of the Center's homeschooled students have received moderately priced instruction in computer programs from software stores and art lessons from an art supply store. Sometimes for older gifted students, adult classes are more appropriate than those designed for children.

4. Parents are often surprised to hear that homeschooled children with special needs are entitled to Special Education services through their neighborhood public school. Contrary to popular opinion, children do not have to be below average academically for these services to occur, but must only demonstrate "significant discrepancies" in learning and/or "educational impact" from their disabilities. In addition, the child does not have to be enrolled in the public school to be able to access Special Education. Services may include remedial academic instruction, speech and language therapy, occupational therapy, social or educational counseling and behavioral assistance.

5. Private Special Education services are also available. We commonly refer gifted children to:

Occupational therapists
Qualified tutoring centers
Speech and language pathologists
Audiologists
Developmental optometrists
Counselors in private practice

6. We also recommend that home educators get online. The Internet is a powerful educational tool, a sort of worldwide library. With proper supervision, a child can study almost anything, at his or her level, on the Net. Searching involves little more than typing in a few key words to define a topic, and almost instantly, the student has a number of articles and documents to choose from. Also, some schools and universities provide computer-based distance learning for gifted children.

7. Cable and public access television provide educational programs and enrichment. We try to maintain a current listing of the viewing schedule and encourage parents to do the same. The Discovery Channel and The Learning Channel offer excellent programs and helpful strategies designed for teachers and students. Educational videos are also available at most video rental outlets and local libraries.

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Model

Continued

8. Parents are also assisted in connecting with regional and statewide home educator support groups, as well as small, neighborhood clubs and organizations. Through these groups, parents have occasion to share experiences, expand social opportunities for their children and discover effective learning strategies and educational materials.

9. Homeschooled children also have the option of becoming involved with local public schools without being enrolled full-time. Some private schools are also beginning to follow this trend. Attending school part-time provides social experiences and assists a gradual transition into a more structured environment. We encourage homeschooled students to participate in clubs and team sports at local schools and to take classes that may meet their needs. Examples commonly include, but are not limited to, mathematics, physics, science and foreign languages. Initially approaching a school, particularly when a family has felt "forced" into homeschooling, is difficult. For this reason, we offer advocacy and support. We have found that most school systems are open to meeting the needs of a child creatively, when understanding parents offer to assist in the collaborative process.

Sometimes homeschooling provides a necessary but temporary intervention when traditional schooling is not appropriate or available. Edward is an 8-year-old highly gifted boy who was expelled from his private gifted school for repeated aggressive behavior. His mother, an accountant, suddenly had to cut her workload to half-time, so that she could homeschool her son. Through assessment at our center and a medical evaluation, it was determined that Edward had Attention-Deficit/Hyperactivity Disorder exacerbated by issues of sensory integration and a lack of social skills. A tutor from our umbrella school provided half-time instruction in general academics. Although his mother enjoyed working with Edward on mathematics, getting back to full-time work was her goal. Wanting him to be able to manage his behavior in a structured setting, we set out to help him attend public school full-time. He attended a series of social skills classes, where he worked on listening, eye contact and self-esteem. Because of his AD/HD and his sensory integration problems, his pediatrician consulted with the school to develop a 504 plan. This legal provision for persons with disabilities outlined modifications to support his needs throughout the upcoming academic year. The public school agreed to an abbreviated school day until he was able to govern his behavior on a full time basis.

Realizing that traditional systems do not work for all children, the Center for Education Enrichment facilitates the process of parents taking charge of their children's education. Through a thorough understanding of their child's needs, parents are able to create and individualize a plan that can change and grow. In addition, by empowering parents to connect the available resources to their child's educational program, the asynchronous gifted child can more successfully reach his or her potential through a supplemented homeschooling program. ❖

I'm on the Internet, so what do I do now?

A friend called me long distance the other day to ask this very question--one that lots of folks have asked lately. One of the newest answers is Snap! Online, CNET's newest service: http://home.snap.com. This service was launched in an attempt to lure new Internet users away from companies like AOL, and it's free. Snap! Online is a great "starting point" for Web exploration because the content is organized into "channels" for news, sports, entertainment and other topics, somewhat like AOL and the Microsoft Network. And it has a snazzy, all-inclusive front end that allows you to do everything else you could ever want to do online in one place.

Snap! Online offers:

- *Top news and features from around the Web*
- *Up-to-the minute headlines*
- *Chat rooms*
- *Personalized information like weather, movie listings, stock quotes, sports scores*
- *Easy & efficient searching for Web sites, Web events, business listings, software to download, maps, etc. And best of all, not only is it free, but it's User-friendly! Try it out! http://home.snap.com*

S.B

Getting Your Child the Right Education: Tips for Effective Advocacy

Hope Sargeant

Advocate v.t.: to plead in favor of; to defend by argument before a tribunal or the public; to support or vindicate....
(Webster's Deluxe Unabridged Dictionary)

Advocating for differentiated education of the gifted has never been more necessary. From beliefs such as "every child is gifted," to practices such as heterogeneous grouping, increased focus on standardized testing and legislated curriculum standards, education is becoming more rigid, with less room for educators to respond to students as individuals.

For parents, the bottom line seems obvious: Is their child happy? For parents of intellectually gifted children, happiness is often related to academics. The more a parent knows about the nuances of advocating, the greater the likelihood his child will get what she needs academically and have a happy, productive school year. Here are some basics to keep in mind before speaking for your child.

• Know where you stand.
What are the laws in your state? The policies about giftedness in your school? These form the building blocks of your child's school experience. For suggestions of gifted education contacts, check "Legal Info" at *www.eskimo.com/~user/kids.html* or "Links to State Education Agencies" at *www.ccsso.org/seamenu.html*.

• Know the individuals and groups you're dealing with.
Who supports differentiated education for intellectually gifted students in your district? Who doesn't? Often it's helpful to know why. No matter what the educational policies of your school or laws of your state, you and your child will be bound by the philosophies and beliefs of educators in your schools.

Consider the case of parents seeking a grade skip for their highly gifted child. They knew the elementary school principal, respected for his "child-centered" approach to education, made few accommodations for gifted children. His passionate commitment to helping kids develop personally before imposing the rigors of academics almost persuaded these parents a grade skip would be the worst educational option they could seek for their daughter — until he shared his firm belief that had his own mother not accelerated him as a child, he wouldn't have been too young for college and, therefore, would not have failed his first year.

Many such stories exist. Some administrators and teachers build policies and practices around personal experiences. More likely than not, you'll discover these things not through direct conversations with them, but from other parents. Consider this information when you seek solutions these educators may not favor.

• Know yourself and understand your own motives.
Gifted issues come with hot buttons for parents, too. Unresolved feelings about your own school or family background can take you completely by surprise as you work on your child's behalf. It's important to separate

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Hope Sargeant, *an education consultant, is a freelance writer in the field of education and parent of a gifted child. She lives in New York's Hudson River Valley.*

Advocacy

Continued

your experiences from your child's, so you can more effectively support him/her.

• Know what you want, and why.
Clusters of gifted students in one class? Different core instruction for math and reading? Know what your bottom line is for each child.

At the same time, know the score: Schools long committed to heterogeneity may find it difficult to respond appropriately to a gifted child. The more highly gifted the child, the more difficulty he or she is likely to have, and parents may well also face greater resistance in their efforts on the child's behalf. Therefore, it's often most effective for you to clarify objectives for your child, provide documentation, such as independent testing and/or relevant research to support those objectives, make suggestions and then leave room for educators to find a way in which the objectives can be realized.

That said, it's easiest for a school to pile on extras without altering a child's core instruction. Mentors, independent study, reading time, all of these are ways of diffusing the challenge of providing advanced instruction. But a busy child is not necessarily a happy child, or one working to her potential. All students deserve meaningful instruction, whether they're working at grade level with their age peers, or four years beyond them.

• Know what you're talking about and share resources judiciously.
Every parent will face others' misconceptions about giftedness. How will you respond? You must know your material and share it calmly. Educators are more likely to read short articles than a long book. One or two articles, left in a teacher's mailbox with a note about why you thought he might be interested, can go a long way to starting to shift attitudes. Many parents report letter-writing as an effective way to communicate about sensitive topics.

• Plan for every contingency.
One mom of an entering kindergartner, gifted with mild ADHD, was stunned at her son's placement with a teacher known for a free-flowing classroom, exactly the opposite of recommendations made by a specialist in gifted learning disabled. The principal refused to consider the specialist's recommendations or testing. The mother planned her course of action: meet with the principal to review her position; hand-deliver a letter, respectfully disagreeing with the principal's position; check with the principal after a few days to see if she had changed her mind; go to the Assistant Superintendent and request that he review the case; go to the Superintendent; hold the child out of school.

This mother's contacts included a family friend, a principal in another town, who had a personal relationship with the Superintendent. Although this wasn't her first step, would she have asked her friend to call on her behalf if all other measures failed? Of course. The results: The Assistant Superintendent reviewed the situation, and at 3:00 p.m. the day before school opened, the principal called, offering the mother a different classroom placement for her son.

• Know how to work with others.
Tell the truth. Sometimes it's easy to feel intimidated by school authorities, and in our intimidation we can find ourselves eager to please. Don't ever lose sight of your objectives for your child; don't ever pretend things are fine.

Compromise. Maybe the math course is still wrong for your 4th grader, but the reading program is shaping up. Acknowledge what's working, and wait a week before you tackle the next objective.

Know when to pitch in. If you did the legwork to find resources, would the school take the next step and implement them? Know your strengths and, if possible, volunteer in your child's classroom and/or in the school. Logistically, it's often difficult, but parents report that their involvement makes it easier for educators to see them as reasonable human beings with genuine concerns.

Know when to take a stand. When one mother discovered her child's teacher was actively undermining the child in class, she withdrew the child to homeschool. Although the principal refused to do anything but back the teacher, the parents approached the Superintendent, who planned a more appropriate program, and the child returned to school.

Know when to back off. At some point, even the most willing educators shut down. Be aware. Keep in mind that Back to School Night is a time to say hello, not make a case for your child's special needs. By late spring, the teaching staff has had it, and administrators are turning their sights to the next year. Educators also feel the pressure of community sentiment and statewide legislation; be aware of what's happening in the

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Advocacy

Continued

larger scope of education before you schedule a meeting.

Know when to give up. When one parent heard a teacher say no one teaching on the next grade level wanted to have her boy in class, she knew it was time to change schools.

Express emotion carefully. Parental frustration often looks like anger. School officials find it easy to discount a whole presentation in the face of one strong emotion.

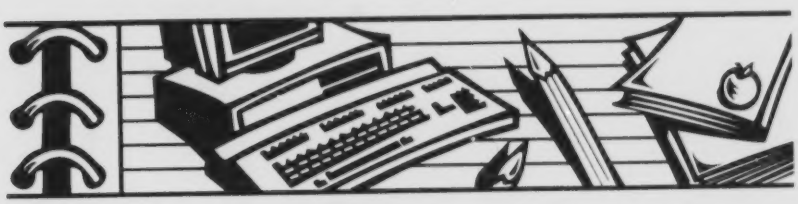
Say thank you. A note delivered the day after a meeting is essential. Even if a meeting was a disappointment, you can still thank participants for their time. Thank you notes can also keep educators on notice. After one principal planned an accelerated program for a child, the pace was still too slow, so the father wrote a thank you note about the program being a better match to his daughter's needs and mentioned he looked forward to continued change.

Attitude is everything. If you go into a meeting believing school officials are responsible and will always do what's best, you will be disappointed. If you believe school personnel are a bunch of know-nothings, you are likely to be equally disappointed and alienate educators as well. The most useful — and most challenging — attitude to have, is that you are co-learners, partners in a challenging educational venture.

• **Document everything.** Events can unfold quickly. For one reason or another, it's unlikely school officials will offer you a program or decisions in writing. It's up to you to write down everything and to refer to your records when necessary. Follow each meeting with a matter-of-fact, succinct letter copied to each participant, reviewing the decisions reached or, if there were no agreements, the viewpoints of each participant.

• **Get a life.**
Know what rejuvenates yours and pursue it. Whom can you talk to? Having the support of someone who understands, by phone, over coffee, via email, is essential. Next, what keeps you going, intellectually, spiritually, emotionally, physically? Life with a gifted child can be so all-consuming that we forget ourselves and our own needs. That may work in a period of crisis, but over the long-term, it may only serve to reinforce your child's dependence on you.

Yes, educational change takes forever. It's up to us to never forget that with effective, unrelenting advocacy, change for our gifted children is possible. ❖



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ParentSpace

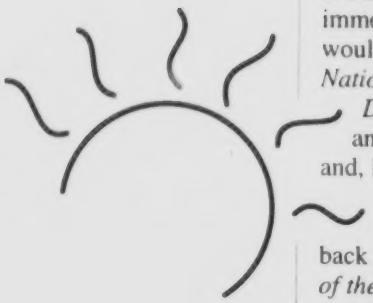
Laura Goodman

Progress Report: The Summer Boy

A year ago "The Summer Boy," the story of our son and our family's philosophical and educational metamorphosis, appeared here in the pages of *Understanding Our Gifted* (reprinted in this issue), bringing immediate, then ongoing, response from readers. From everywhere came phone calls, letters, e-mails, Internet comments, sincere handshakes. It seems there are Summer Boys and Girls living in communities all across this country!

It was as if word was finally out on a formerly secret society; I heard again and again from parents, "We've got one of those at home!" Individually, readers of that column told me the same thing: they had assumed (as did my husband and I) that they were the only parents who had a child such as this — a brilliant little individual who does not fit into the school norm. But, they'd go on to say, our experiences let them know they weren't alone, that there were indeed other families at once blessed and struggling with such children.

And what of our boy and our year, these parents of other Summer Children always ask, how's he doing in the new order of things, how's it going for all of us? Has he come back from The Dark Side? Did it work, others want to know. Of course, it's too early in a young life for any ultimate judgments, but, though we're not much for report cards anymore, what I can do is sketch out a progress report and let you decide for yourselves how he's doing.



Reading and Writing: Out of school, our once-voracious reader immediately and steadfastly refused to read or write. Anything. Nor would he be read to. So we littered the house with *The Smithsonian, National Geographic, Architectural Digest, Nature, The New Yorker, Discover*, fat collections of Calvin and Hobbes, books at all levels on any number of subjects. We held our tongues and crossed our fingers, and, heartsick but hopeful, we waited for the sun to come out and the return of our reader. This waiting went on for months, with no movement at all. One day last spring, in the days when he'd crept back only as far as *Mad Magazine* and I was halfway through *The Lives of the Monster Dogs*, a Kristen Bakis novel whose dust cover bore a dressed-up dog standing on two legs, I saw my son reach for that book, obviously interested. He picked it up but then dropped it again instantly, as if the thing had scorched his fingers. He spun away from it, and I saw the look on his face — a mixture of revulsion, fear and desperation, and in that moment I glimpsed the visceral depths of his conflict. Having been made to read was no small thing to him and had affected him profoundly, much more so than we knew. In this last year, he's read one book, Clarke's *2001, A Space Odyssey*, and written some thank-you notes and e-mails. Very slowly, he's making his way back from that negative place of disaffection, and we try to wait patiently for him to rejoin us here in the fold of passionate readers. *Let me tell you, it takes faith to do things this way.*

***Laura Goodman** is a fiction writer, editor and mother of a gifted child, not necessarily in that order.*

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The Summer Boy

SUBVERT THE DOMINANT PARADIGM! If I could find one, I'd plaster that old bumper sticker across the back of my car. Maybe my head. Because that's just what our family has done.

The seeds of our subversion were sown in early summer. We stretched a four-day business trip to Geneva into three weeks of travel in Switzerland, France and London. The three of us — Dad, Mom and the 10-year-old — took in everything we could possibly manage to see, hear, touch, smell, taste and do. A grand little tour! On a train coming down from the Jungfrau, a friendly grandfather from Kentucky asked my son what was the earliest age he thought children could benefit from travel in Europe. My son's reply was prompt. "Maybe 8," he said, "but 10 is *perfect!*" It sure was for him, anyway

This boy's always had the extraordinary ability to take in, process, then integrate and use what he encounters as he moves through the world. But this seemed like more. To hear him picking up French from vendors and waiters and listening to Europeans speak to their dogs was something else. He would have been fluent in three months. His split-second money conversions were wonders; we shook our heads knowing that back home he would have bucked and balked at a page of math problems like those. Then, as we all walked, mouths gaping, through the 12th-century cathedral in Chartres he whispered to me that only right then did he truly understand the meaning of the word "awestruck." Language, cultures, history, geography, math, art, architecture. There was no end of it for him; it all went in, and he couldn't get enough.

At home again, he and his summer got better and better, the best ever. He was living with the throttle wide open and loving it, but in the early days of August I began to get nervous about school. This child's gifts are intellectual, *not* academic, and over the last year we'd watched him cloaking a good bit of that intellect in order to fit in with his "crowd of choice." He'd thrown over any semblance of caring about academics, doing his schoolwork with his feet it seemed, holding his nose and griping bitterly. Nevertheless, his grades were fine, but he'd grown increasingly negative about learning or being taught anything by anyone. His teachers hated him, he told us, and he them. By the end of last school year, nearly everyone in his life — his parents, adult friends, the teachers and administrator at his school, therapists, all had mobilized to help him and stop the slide. Everyone, that is, except the young man himself, and he didn't care. It wasn't a bit pretty. But summer came and with it our remarkable trip, and our boy came back to us.

Here the story gets long, the details too numerous to list, but the climax is that September came and we took him out of school after two days. We couldn't bear to watch as our boy climbed back inside himself to that dark, negative place where he goes when we're all trying to make the multi-dimensional, rough-hewn peg that he is fit into that round, smooth-sided little hole called school. It hurts my heart now to think what a lonely and painful place that must be. And because we couldn't live with sending him down there again, we brought our son home for good. We do school a different way now, we tell anyone who asks.

We want that summer boy with us all year round, the one who leaped and laughed and learned French out of the air, who did math effortlessly, who gave himself to words at the molecular level. As a family, we subverted what is one of the most dominant of American paradigms: school as education. John Taylor Gatto, award-winning teacher and writer, makes the critical distinction between schooling, which is what happens in American schools, and an education, which is accomplished in living and profiting from a full life. It's an *education* our son seems determined to have and which we want for him. Thanks to those phenomenal capabilities to process and integrate and use whatever he finds around himself, I see how this child began educating himself in meaningful, momentous ways from his easiest days. I finally understand that school was always in his way; it tripped him up, beat him down and sent him home with the message that he wasn't so great at doing what he'd been doing brilliantly on his own for years: learning.

We'll try to stay out of his way, capitalize on his strengths, develop and refine and use them as we proceed together through our new and personalized paradigm of education. We'll do it at home and out in the world, though field trips to Paris or Stratford-on-Avon aren't essential. We'll do our learning walking down neighborhood streets and along nearby streams, tramping through fields, riding in the car, going to museums and lectures and concerts, sitting in courtrooms, cruising stacks in libraries and aisles in hardware stores, from people we know and those we haven't met yet. We'll let him learn as he does best and as he loves, by living and doing and making connections, by discovering answers to his own questions. We'll all be much the better for it; in fact, though it's only been a few months, we already are. ❖

(Originally printed in *Understanding Our Gifted*, Fall 1996)

ParentSpace

Continued

Math: Numbers and their theories, for the sake of themselves, constitute a land of little meaning and less worth for our Summer Boy. However, if he sees a need, then numbers serve him well and he finds himself easily negotiating his way through now-friendly territory. We allow for and encourage real-life opportunities to show him that he's an able pathfinder, and we've watched with delighted amazement as he's found his way through that country to the computer and a number of math programs. At the moment, geometry seems to be his favorite haunt, and the lines formerly demarcating enemy territory have thinned significantly. *This one requires less faith from us but more restraint; in our enthusiasm, we must take care not to let our wonder become overzealous encouragement, then pushing.*

Science: Easy one! Even at his most rigidly unreceptive, the Summer Boy's curiosity and inherent science bent would not let the dark doors shut him away completely. Early last fall, I lost control over a thick catalog (ordering blood-typing tests, chemicals and equipment, physics experiments and electronics kits) and, in response to his petulant, skeptical look when the box arrived, I put everything away, saying it would all be there and ready if he ever was. But I knew there were a few items in that box that would "get him," and so they did: the grasshopper, starfish, grantia sponge and frog, all swimming in their jars of preservative, along with the handsome dissection kit. The next thing I knew, our kitchen reeked of formaldehyde and the boy was running daily dissection labs. The neighborhood kids would have paid to come, but he didn't ask them to; instead, he gloved them up and taught them how to dissect, identifying body parts as they went. He likes to cook, too, which is certainly science of another sort, and he's good at it. And just last week he built a circuit board, and we both learned about current and capacitors and resistors and diodes; my favorite among his electrical creations was the Morse Code generator. *We don't tell him to do these things, or even ask him. We provide the "raw materials," which he is free to use or not. He's free to learn, or not, and that makes all the difference to a child who'd once loved to learn but was severely impeded by an excruciatingly slow pace, felt imprisoned by the trappings of organized learning and dispirited by its mandates and obligations.*

Geography, History, World Cultures: In school he'd played "Where in the World is Carmen Sandiego" on the computer and told me it was "a silly thing for children." Last May, he boarded a plane alone and flew to Paris, where he spent the best five weeks of his life with our old friends who live deep in what once was Louis XIV's hunting forest of Rambouillet. He returned an avid 11-year-old authority on the French, their customs and history; he came back speaking French, loving the language, hungry for more. He'd go back in a heartbeat, stay a year. Though he can't say for sure, the Summer Boy thinks he once studied Canada in school. A couple of months ago he and I accepted an invitation to tag along on someone's fieldwork trip to Newfoundland. This was a defining experience in many, many ways, and from the incredible week on that island province, we've both begun to truly "explore" Canada. I don't know how to explain all this except to say that it's the kind of person he is, but this child seems more at home out in the wide world than he does in his own backyard. These Summer Boys and Girls seem to learn staggering amounts just from being alive and breathing in real-world air. *We figure we could pay tuition bills, which we used to do, or we can save up for airline tickets.*

In all honesty, at times in the last year, the waiting felt as if we were doing nothing for our son. In truth, though, I think it was closer to everything. We held on through the long months of his restless boredom and anger, his seemingly relentless aversion to *anything* educational, his just being a kid, and we refrained from rescuing him and ourselves by telling him what to do. It was an informed waiting. We repeated how much we love him, trust him as a worthwhile human being and as a fast and efficient innate learner whom we respect enough to entrust and empower with responsibility for and choices in his own education. From the beginning we made it clear that we expected him to maintain the same household and larger-world standards of personal and social integrity — that means he still had to do all his chores, keep promises, be good to people at home and out in the world. That concept, along with a few others, took some time to incorporate into the new order of things, but he got it soon enough and appreciates it, because it all makes sense to him. Life makes sense to him now, and to all of us, in a way that it did not for years. We wanted that happy, healthy Summer Boy with us all year round, and we've got him. What we couldn't know until fully basking in it, is how wonderful the reflected warmth and light is from a genuinely happy and productive child, one who's making his own meaningful way in learning. What joy there is in this for all of us! ❖

Surfing the Net

Sandra Berger

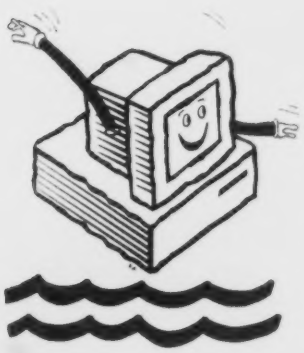
More Science Curriculum Resources

The world of science on the Internet offers a vast number of resources for children of all ages--too many substantive resources to include in one issue. (See *Understanding Our Gifted,* Summer 1997, pp. 23-25) This column presents more science curriculum resources and includes some museums to visit online. If you're shopping for holiday or birthday gifts, online shopping is very convenient because the stores never "close," and you will find some unusual gifts. Be sure the host has a secure server when you are paying with a charge card. Here's one way to tell:

Using Netscape, look for an image of a key in the lower left corner of your screen. If the key is "broken," the server is not secure. If the key is intact, the host offers the security you need. Internet Explorer probably has a similar icon that indicates a secure server. When a site has no indication of security, you might be able to ask the Webmaster or the person responsible. Look for an e-mail address at the bottom of the home page.

Let's go surfing!

Current national reports recommend a major shift in the organization of curriculum. This shift places a new emphasis on key concepts and scientific principles taught through hands-on, real-world problem-solving. Data from the recent studies of American science and mathematics education highlight the need for curriculum that stresses concepts over facts, uses selective examples to support and illustrate principles and replaces passive learning with hands-on inquiry. The Internet is a convenient vehicle for implementing problem-based curriculum activities. For example, the first site on our route, the National Science Foundation, offers curriculum activities based on the concept of communication.



* National Science Foundation
http://www.nsf.gov/od/lpa/nstw/teach/activity/english.htm#one
To celebrate National Science & Technology Week the NSF created an interactive Web site consisting of a spectrum of communications activities--from natural, non-technological to more complex forms requiring the use of codes, wires, radio waves and networks. They are designed to be undertaken in sequence but can also stand alone as independent units. Each activity is recommended for an appropriate age range, but most can also be adapted for use with younger or older children. Each unit includes two or three activities, resources and its own community outreach section. The first unit is titled "Scents and Sense Abilities." Children explore various natural (non-technological) methods of animal communication, each involving the senses of sight, sound, touch or smell. These activities also introduce the concept (expanded in later units) of vibration as the foundation of all sound.

To learn about NSTW events in your area or to learn how you can become more involved, contact:
National Science & Technology Week
National Science Foundation
4201 Wilson Boulevard
Room 1245
Arlington, VA 22230.
E-mail: *nstw@nsf.gov* URL: *http://www.nsf.gov/od/lpa /nstw/start.htm*

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Surfing the Net

Continued

Hubble Space Telescope Educational Resources

* Explorations in Education
http://www.stsci.edu/exined-html/

* Amazing Space
http://oposite.stsci.edu/pubinfo/amazing-space.html
These two Space Telescope Science Institute (Hubble Space Telescope) resources are powerful educational tools that offer stunning content. Both sites are browser and graphic intensive. Explorations in Education provides over 15 electronic picture books featuring captioned images from HST. The picture books must be read in HyperCard or WinPlus Runtime. This site features a very large (7 MB) stand-alone Quicktime based electronic tutorial about using Cepheid variable stars to help measure the history of the universe and several Adobe Acrobat (pdf) papers relating to science and public policy. If you don't have this software, you can get Adobe Reader free from CNET. Point your browser toward *http://www.download.com/* and use the search engine feature to find a wide variety of software, including Adobe Acrobat Reader.

Amazing Space contains K-12 educational activities about the planets, stars, universe and the history of telescopes. Under construction is a section on the life cycles of the stars. Amazing Space also offers a student astronaut challenge accompanied by a highly detailed Teacher Page that provides teachers with the information they need to conduct the student challenge as a lesson, for example, an overview, grade levels, process skills required, preparation time, execution time, a list of desired outcomes and a vocabulary list with definitions, just to name a few.

* Science Education Gateway--SII
http://www.cea.berkeley.edu/Education/SII/SEGway/
No-frames version:
http://www.cea.berkeley.edu/Education/SII/SEGway/seg_noframes.html
For access to lesson plans and resources from some of the best science museums in the United States, teachers can enter the Science Education Gateway. Dubbed "the public user interface of the Science Information Infrastructure," the Gateway is a collection of links to lesson plans and K-12 educational resources in the physical sciences. The site is provided by five Web museums, including the Exploratorium, the Lawrence Hall of Science and the Center for Earth and Planetary Studies (Smithsonian Institution). Topics covered include Space Science, Light, Cycles, Sun & Earth, Weather and Solar System. Each section contains briefly annotated lesson plan links (including grade levels and source), a "grab bag" of related resources and lesson plan templates.

*Geological Time Machine at UC Berkeley
http://www.ucmp.berkeley.edu/help/timeform.html
http://www.ucmp.berkeley.edu/exhibit/exhibits.html
Let your students ride this World Wide Web time machine to different geological time periods--from the Precambrian to the Holocene! Do you have a budding paleontologist in your family? The Museum of Paleontology of The University of California at Berkeley is continually adding content to all of the 26 time periods currently accessible via the time machine. Recent additions include new dinosaur fossil images and the latest essays and research papers from more than two dozen geologists and paleontologists–all of which students in grades 8 and up will not only understand, but enjoy reading. Students can learn more about "The Tree of Life," browse photos of great white sharks and explore fossil records. Paleontology exhibits include the areas of phylogeny, geological time and evolutionary thought.

* Dinosaur Exhibit
http://www.hcc.hawaii.edu/dinos/dinos.1.html
For the first time in Hawaii, there is a unique, free, permanent exhibit of dinosaur fossils available for public viewing. These "fossils" are replicas from the originals at the American Museum of Natural History in New York City, which boasts one of the finest and largest collections of dinosaur fossils in the world. This Web site of dinosaur exhibits is sponsored by the Honolulu Community College and includes Triceratops skull; Tyrannosaurus rex head, skull and leg; Stegosaurus skeleton; and a baby Hypselosaurus sculpture. They have "hot links" to other paleontology sites.

* Virtual Frog Dissection Kit
http://george.lbl.gov/ITG.hm.pg.docs/dissect/info.html
The Lawrence Berkeley Laboratory has created the Internet's first online dissection kit. Designed for use by high school biology classes, this Web site gives students the ability to explore the anatomy of a frog using data from high-resolution imaging–all without needing to dissect a real animal. The ultimate goal of the project is to enter the heart and fly down blood vessels, poking our heads out at any point to see the structure of the surrounding anatomy.

* The Froggy Page
http://frog.simplenet.com/froggy/
Billed as the "link to froggy things from various places on the Net," the Froggy Page is a fun, educational Web site students of all ages and grade levels will enjoy. There's a clickable database of pictures and sounds of frogs from around the world, and froggy tales from Aesop, Aristophanes and Grimm. Ribbit!

* Learning Resource Server
http://lrs.ed.uiuc.edu/LRS/
curriculum guides and lesson plans
http://lrs.ed.uiuc.edu/K12/curriculum.htm
The Learning Resource Server at the University of Illinois, Urbana-Champaign, has as its goal the provision of resources that help learners advance from "surf-

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Surfing the Net

Continued

ing" to "serving." It has been redesigned to better serve the needs of learners and teachers at all levels. The Learning Resource Server contains resources for accessing and creating knowledge for K-12 classes, higher education students and teachers and teacher education. Resources include exemplary lesson plans, how-to guides and good network-based learning projects and papers.

* Discovery Learning Community
http://school.discovery.com/
Discovery Communications (better known through cable television as the Discovery Channel and the Learning Channel) has an Internet site designed to help teachers, students and their educational partners devise innovative uses of Discovery programming. The Discovery Learning Community provides resources, relationships and collaborative tools to promote academic inquiry and knowledge building. Their site includes some lesson plans and other "stand-alone" activities, but most of the information is meant to accompany their television broadcasts. This is a great place for homeschoolers.

* Bellingham Public Schools curriculum and lesson plans
http://www.bham.wednet.edu/default.htm
The Bellingham Public Schools Web site is recommended when you want to collect information and formulate ideas about designing collaborative and educational Web-based activities. The site offers a selective collection of curriculum resources by subject or grade level and lesson plans integrating the use of technology into the curriculum. I followed a link called "exploring space" and found lesson plans and information on the planets, stars and comets and the moon. The bottom of the menu is a link to classroom activities that will save teachers hours of time.

A half dozen problem-based lessons for adult learning of new technologies are included. They require teams to explore challenging and authentic issues. Educators are provided with instructions for building curriculum pages that include 18 design tenets for WWW sites, helping them avoid the pitfalls that created problems for the pioneers.

*Rockhounds Information Page
http://www.rahul.net/infodyn/rockhounds/rockhounds.html
The US Geological Survey (USGS) Mineral Resource Surveys Program contains mineral resource information as well as several links to other sites. John Hopkins Underemployed Geologists Homepage contains some links to other earth science resources as well as some rock and mineral specimens for sale. If you're interested in shopping, this site has hundreds of links to a wide variety of Internet shops that specialize in rocks, minerals and gems. This page was established by members of the Rockhounds listserv discussion group.

* SCORE (Schools of California On-Line Resources For Education)
http://intergate.humboldt.k12.ca.us/score/
This site has been developed to assist K-12 students and teachers in locating quality science resources on the Internet.

* The Why Files
http://whyfiles.news.wisc.edu/
Explains the science, math and technology behind current headlines. Also includes science images and science-related sports information.

* ExploraNet
http://www.exploratorium.edu/
Located in the Palace of Fine Arts in San Francisco, the Exploratorium is a museum of science, art and human perception with over 650 interactive exhibits. Their ExploraNet Web site takes many of these exciting exhibits and makes them available to young Internauts around the planet! There are hands-on activities involving vocal vowels, color vision and a mysterious fading dot. Users can also browse current and past issues of Exploratorium's What's New in the World. It contains a "Digital Library" of past images, sounds, exhibits and Web cams and also features educational presentations on understanding shadows, a cow's eye dissection and more.

* A Teacher's Guide to Student-Built Experiments and the Exploratorium
http://www.exploratorium.edu/publications/HandsOn-Science/HandsOn-Science.html
The Science Snackbook, written by teachers for teachers, shows how to build exciting hands-on science exhibits for the classroom. This magazine features articles by elementary, middle and high school teachers that tell how they teach science using interactive materials from the Snackbook.

SCIENCE MUSEUMS
The International Council of Museums maintains a home page at *http://www.icom.org/*. Their listing of museums and links
http://www.icom.org/vlmp/world.html
is the largest on the Internet. The list is categorized by country of origin.
The following is a selected list of science museums on the Internet. Most have lots of online exhibits for children; some have virtual reality exhibits. If you are shopping for holiday or birthday gifts, most of these museums have online gift shops.

* Franklin Institute's Science and Natural History Museum hotlist
http://sln.fi.edu/tfi/hotlists/museums.html
The Franklin Museum's hotlist includes 27 science and 23 natural history museums. My favorites are listed below:

* The Franklin Institute Science Museum
http://sln.fi.edu/tfi/virtual/vir-summ.html

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Surfing the Net
Continued

* Field Museum of Natural History
http://www.bvis.uic.edu/museum/
The Field Museum of Natural History in Chicago now offers an interactive tour of the newest public exhibit, DNA to Dinosaurs, including moving images and sound. If you have a Silicon Graphics workstation you can also view in 3-D.

* Smithsonian Institution
http://www.si.edu/
Smithsonian Shopping Mall
http://www.si.edu/youandsi/products/start.htm

* Smithsonian Office of Elementary and Secondary Education
Includes curriculum materials, teacher resources, teacher development info and more.
http://educate.si.edu/

* National Air and Space Museum
http://www.nasm.edu/

* National Museum of Natural History
http://nmnhwww.si.edu/nmnhweb.html

* Hands-On Children's Museum
http://www.wln.com/~deltapac/hocm.html

That ends our surfing trip for now. Hope you had fun and that all the budding scientists in your classroom or family enjoy some of these terrific science resources.

Wave if you see me surfing!
sberger@inet.ed.gov

The ideas expressed in this article are the author's, and do not necessarily represent the views of CEC or ERIC Clearinghouse on Disabilities and Gifted Education.

The URLs were accurate and working when last checked, on 9/5/97. The Internet is a dynamic place, and changes take place rapidly and without warning. If you receive a message indicating that a URL cannot be found on the server, the server might be temporarily down or the URL might have changed. Try again later. ❖

Aspectus

Gifted Children: Myths and Realities. **Ellen Winner.**
New York: Basic Books
1996 23.00 ISBN 0-465-01760-6. 449pp.

Parents can identify giftedness in their children even when they are infants. Parents may simply interact socially and verbally with their children on a higher level when they recognize that their children can understand such interaction. (p. 186)

In two sentences, Ellen Winner captures simple truths about the gifted: that they are accurately identified by their parents and that their parents organically adjust to their needs. It's too bad that this line, embedded in a discussion about characteristics of gifted families, isn't the thesis of Winner's book.

Gifted Children: Myths and Realities is organized around nine myths of giftedness as identified by Winner. These include the myth of the Globally Gifted, the Biology versus Environment argument and the misconception that the gifted are Glowing with Psychological Health. Most of the information in these chapters has been covered more effectively elsewhere by others.

Winner spends a great deal of the book reviewing the groundbreaking work of Leta Hollingworth, Miraca Gross and others. She then goes on to confound readers with short-sighted hypotheses based on some of these pioneering theories and offers up a number of confusing conclusions. Even when making salient observations, such as that parents don't "train to create" prodigies (p.14), her point of view fosters a sense of gifted people as amalgams of characteristics. Because of this, the book loses value as a historical review and fails entirely to offer a fresh perspective on the gifted.

A chapter on the myth of the Driving Parent might have encouraged a more humane view of the struggles faced by parents of gifted children. Instead, Winner dilutes her opportunity by highlighting a family now famous for pushing their son too far too fast. Her focus on this extreme case leaves countless others to battle this all-too-pervasive myth alone. When discussing reasons a child might lose enthusiasm for an area of interest, or "domain," she can find none to fault but parents – even as she recognizes that schools seldom nurture these gifts.

In the chapter "Schools: How They Fail, How They Could Help," Winner goes to great lengths to point out the overwhelming failure of the educational system in meeting the needs of this population. We read about two boys, Alex and Peter, both removed from school to be educated at home, who florished. Winner then proceeds to characterize home education as an "extreme" choice, yet her reasons for this viewpoint are curiously absent.

She blames our society's "egalitarian, anti-elitist ideology" and "... our profound ambivalence about intellectual excellence" for the current trend in disbanding gifted programming. Her solution to this dilemma is to make curriculum for all students more intellectually rigorous; that way, the average gifted student will be well served in the regular classroom, thus freeing up resources to be focused solely on the needs of the highly gifted. Although Winner accurately reminds us of Hollingworth's discovery that significant differences exist between the educational needs of the gifted and the "severely" gifted (those with an IQ over 160) her solution is ultimately divisive. Rather than helping educators identify and reach this lost population, it would more likely continue to leave the highly gifted unattended, with other parents protesting "elitism."

Winner misses a precious opportunity to expand our view of the gifted. "I distinguish sharply between little c and big C creativity," she states. "Gifted children typically are creative in the former sense; they make discoveries on their own and solve problems in novel ways. But they cannot be creative with a capital C, for by this I mean transforming a domain..."(pp. 2-3). In a time when big C creativity is *crucial* to our understanding of the gifted, another clever book that recaps, though admittedly in novel ways, what is already known is a wasted opportunity indeed. Sadly, Winner's book barely makes the grade in the little c category. ❖

C.R.

Above & Beyond

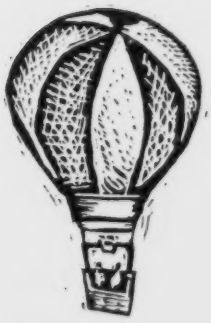
Susan Winebrenner

Where Have All the Gifted Programs Gone?

As I travel around the country on speaking engagements, I cannot help but notice the changes regarding programming for gifted students. Pullout programs have all but disappeared. Any program for gifted kids that is associated with the word "special" is rejected as "elitist," a word that appears to have the power in and of itself to bring an end to a gifted program. Programs for gifted students are sacrificed in the name of budget crunches at the same time as appropriated funds for other students with "exceptional educational needs" are greatly expanded, albeit with significant support from state and federal funding sources.

In my opinion, the most significant explanation for the disappearance of gifted programs is our democratic country's devotion to the concept of egalitarianism. This term is unfortunately interpreted to mean that all students should get exactly the same educational experiences, instead of all should have an equal opportunity to actualize their learning potential. If we, as advocates for gifted students, want to do our part to maintain appropriate learning opportunities for them, we need to re-examine our vocabulary, beliefs and expectations.

There is a call in the world of education for "equity and excellence." If we define equity as equal opportunity for all students to learn at their challenge level and excellence as opportunities for all students to reach their own learning potential, our appeals to maintain appropriate "programs" for gifted kids may be perceived as compatible with school and district goals.



It has become counter-productive to limit the term "gifted" only to those who excel in academic areas. Likewise, it has become politically incorrect to expect something "special" for kids who already seem overblessed. As advocates for providing for the needs of gifted students, we would do well to shift our efforts so they fit the philosophy statements currently in vogue in public schools. We need to express our belief that *all students*, including those with academic learning abilities that exceed those of their age peers, will have equal opportunities to receive what is promised by school districts to all students. Therefore, nothing *special* is expected, even though something *different* may be needed.

Remember, gifted kids are not "special," at least no more so than any other children. But the gifted do need different educational opportunities from those routinely provided for age peers so that gifted kids can actually "learn" in classes that are geared for age appropriate learners. As teachers become more knowledgeable about Howard Gardner's concept of multiple intelligences, the term gifted must be expanded to include students with exceptional abilities beyond the academic into the areas of fine arts, leadership and bodily-kinesthetic skills. Of course, in many schools, there already exist ample opportunities for students with gifted ability in non-academic areas to express their gifts in special programs and competitive opportunities. We need to advocate that students whose gifts are in the academic areas have just as much need to experience classes that are more complex and abstract than those appropriate for age peers. We need to be less concerned with the label of "gifted" and more willing to advo-

***Susan Winebrenner**, from Michigan, presents workshops on a variety of topics, but her first love is teaching gifted children. She is the author of Teaching Gifted Kids in the Regular Classroom and Teaching Gifted Kids with Learning Disabilities in the Regular Classroom.*

cate that all children regularly experience challenging learning opportunities.

Schools usually make promises, stated in their philosophy or mission statements, sounding something like these:

All students will be challenged in their learning situations.

All our students will be expected to actualize their learning potential.

All students will enjoy high self esteem as an integral part of their schooling experience.

We can best advocate for the needs of gifted learners if we simply challenge schools to demonstrate how their promises are being delivered to all children, including those whose advanced learning abilities require differentiation of curriculum.

All parents have a right to ask this question of all their children's teachers: "What evidence do you have that my child is working at her challenge level in your class?" All teachers have an obligation to answer that question. That means that teachers must know how to provide learning experiences that stretch students' existing capacities. To offer a "one size fits all" curriculum is inadequate.

Actualizing one's learning potential is not as easy as it sounds. It cannot be done until the teacher understands and accepts the value of challenging all students to move into uncharted waters. Gifted students often don't come close to their learning potential, especially when they are "given" high grades for work they know took little to no effort. Parents have an obligation to support teachers' efforts to provide challenging learning experiences. This means that when your children come home with something less than an outstanding grade, you help them celebrate that their teachers are providing them opportunities to stretch into authentic learning. High grades do not guarantee that real learning has taken place. If parents are more interested in high grades than in having their children learn how to learn, potentially traumatic situations are predictable as these kids move into college.

Educators will often state the belief that all students should have their self-esteem needs met as part of their learning experiences. But self-esteem actually is enhanced when success is attained with something a person perceived would be difficult or challenging (Rimm, 1987). Development of high self-esteem requires that students be allowed to challenge themselves in an environment in which their mistakes and struggles, as well as their successes, will be allowed and appreciated. When students get high grades and other kudos for products they know required little or no effort, their self-confidence is undermined, and they learn to always find the easiest way out, postponing their exposure to challenge in many creative ways. Many really fear that if they try something challenging and are not instantly perfect at it with little or no effort, others might conclude that they are not really very smart after all.

Another consideration linked to self-esteem is that youngsters have to feel acceptable just the way they are — that one doesn't have to change to become more "normal." Gifted kids, especially as they enter adolescence, often go into hiding regarding their intellectual abilities because they perceive messages from others in school that they would be better off if they were more like other kids, less different. Classes need to provide safe havens for gifted students to demonstrate their exceptional learning ability without feeling weird or unacceptable.

The "programs" we should seek for gifted learners are those that deliver the promise made by most schools: to provide consistent daily opportunities for challenging learning experiences for all students. This goal *automatically* requires providing differentiation of content, pacing and grouping practices for the most capable students. These differentiation opportunities are always available for students who struggle to learn. The precedent for differentiation is in place. Since gifted learners are just as atypical from average as are kids with learning problems, the differentiation they need is highly defensible. Let's be sure this concept is understood at all our children's schools. ❖

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Intelligence Revisited

Winter, 1998 Volume 10, Issue 2

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Understanding Our Gifted (ISSN 1040-1350) is published quarterly by **Open Space Communications, Inc.**, P.O. Box 18268, Boulder, CO 80308-8268. Subscriptions are $35 for 1 year. Institutions $45. International subscriptions are $47 U.S. funds, International Institutions $57. Back issues available. Third class postage paid at Boulder, CO. For subscription address changes, send mailing label along with new address to ***Understanding Our Gifted***, 1900 Folsom, Suite 108, Boulder, CO 80302, eight weeks before moving. Material in ***Understanding Our Gifted*** can be copied for personal use only. No material can be reproduced for publication without permission. Appropriate credit must be given. Copyright 1998, **Open Space Communications, Inc.** All rights reserved.
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Focus: Intelligence Revisited

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Between the Lines

One of my professors back in grad school believed that IQ should be part of your routine vital statistics....you know, the kind on your driver's license: birth date, height, weight, color of hair, and so on. On the surface his idea sounded pretty good, his logic convincing. He reasoned that he was trying to eliminate the mystique and elitism connected with intelligence.

I almost agreed with him until I started learning more about intelligence and IQ. Sifting through all the information I was required to absorb—the many testing methods, the limitations of test ceilings, the real meaning of test scores—I came to realize that doing what he proposed would box individuals into yet another category. It might be okay to be in the blue-eyed group or the short people's group, but being summarily sorted by numbers into the low IQ group or very high IQ category? No thanks.

In the couple of decades since the learned Dr. W simplistically argued for relegating intelligence to not much more than a check mark in a box, our understanding of intelligence and IQ has increased in depth and in its translation to practical application. We discuss the workings of children's minds in terms of multiple intelligences, a plethora of assessment techniques, ceilings that may act as barriers to accurate testing results and questionable labels such as "severely gifted." The latest research is already in place on children's capacities for learning, and parents and educators are—or should be—learning how to effectively utilize this increasing body of information at home and in classrooms.

It seems a good time to revisit the domain of the human intellect, how and why to measure it, particularly here for us, in regard to giftedness in children. In a variety of ways and from varying points of view, contributors to this issue have done just that. We begin with Miraca Gross, writing from Australia, who turns her insightful, laser-like gaze to the practices of testing children at the outer reaches of the intelligence spectrum and makes a strong case for their assessment and appropriate placement in educational settings. Julia Osborn then takes us inside the process of evaluating intelligence itself, exploring the cogent distinction between testing and assessment. After Gross' and Osborn's insider offerings comes an essay by a comparative outsider, Barbara Carroll, which ranges farther afield, opening up the discussion to broader questions on the nature and quantification of intelligence, as well as wondering at how potential is (or is not) fulfilled in adulthood. A novel ParentSpace contribution by Daniela Kuper speaks to and extends this last thought far into the realms of the personal and the creative. We trust you'll find reading this issue as compelling as we have in working on it. ❖

D.K.

Intelligence Revisited

Issues in Assessing the Highly Gifted

Miraca U.M. Gross

Testing is critical for the appropriate placement of gifted students. Many do not appreciate this, perhaps because of ceiling effects in most testing instruments used with precocious students (Achter et al.,1996) and because schools tend to offer the generic 'gifted program' or focus on general intelligence rather than develop programs responsive to the different levels and types of giftedness. The typical 'gifted treatment', usually a 1- to 2-hour pull-out experience in the school week (i.e. the 10% solution to a 100% problem) cannot possibly meet the educational needs of all gifted students and can give the appearance of being superfluous; it sometimes is. (Benbow & Stanley, 1997, pp. 263-264)

Benbow and Stanley cover several important issues in this brief segment from a lengthy but engrossing paper which should be compulsory reading for everyone in the field of gifted education. How essential are ability and achievement testing of intellectually gifted students? How can we combat the problems of ceiling effect in assessing the highly gifted? And how can we ensure that, rather than offering "the generic gifted program" — a "one size fits all" provision — schools will become aware of *levels* of giftedness and develop a range of curricular and programmatic responses to the needs of highly, exceptionally and profoundly gifted students while continuing to serve the more moderately gifted?

Both ability and achievement testing are, indeed, critical both for the appropriate placement of gifted students, and for the successful delivery of a curriculum adjusted to their learning characteristics and needs. In recent years, however, intelligence testing has been mistrusted, indeed dismissed as irrelevant, by many teachers in both America and Australia.

A major cause of the misunderstanding among the educational and lay community, of the nature and value of intelligence testing, has been the sensationalized and falsified media coverage of the concerns of a vocal minority of psychologists, which has led to a widespread perception that IQ testing has been discredited and largely abandoned by the psychological community. However, this is far from the truth.

There is no perfect measure of cognitive ability. Indeed, it is doubtful whether *any* domain of human ability can be perfectly measured, at all levels, and in all its forms. However, some 10 years ago, Snyderman & Rothman (1988) surveyed more than 1000 social and behavioral scientists knowledgeable in areas related to IQ testing and found that the majority believed that, even with their limitations, intelligence tests provide the most valid and reliable measures of intellectual ability, supported their use as predictors of school achievement and accepted the evidence for a substantial hereditability component in IQ. They then contrasted these expert opinions with comments on these subjects made in the popular press and on television. "What the professionals really thought about IQ tests, and the media's reports of what they thought, were exact opposites. Newspapers, news magazines and newscasters simply distorted reality, declaring fiction fact, and fact fiction" (Tannenbaum, 1996, pp. 44-45).

***Miraca Gross** is Professor of Gifted Education and Director of the Gifted Education Research, Resource and Information Center at the University of New South Wales in Sydney, Australia. She is the author of Exceptionally Gifted Children.*

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In 1994, in an attempt to counter a fresh wave of media distortion of the principles and outcomes of IQ testing which followed in the wake of Hernstein & Murray's *The Bell Curve* (1994), 52 of the leading American, British and Canadian experts in psychology and psychometrics developed a 25-point statement which outlined "conclusions regarded as mainstream among researchers on intelligence" (Arvey et al., 1994). These "25 theses" were published, as a special feature, in *The Wall Street Journal* of December 13. The first two points are reproduced below.

1) Intelligence is a very general mental capacity that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, think quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings – 'catching on', 'making sense' of things, or 'figuring out' what to do.
2) Intelligence, so defined, can be measured, and intelligence tests measure it well. They are among the most accurate (in technical terms, reliable and valid) of all psychological tests and assessments. They do not measure creativity, character, personality, or other important differences among individuals, nor are they intended to. (Arvey et al.)

Used appropriately, by qualified professionals, IQ tests can provide a wealth of information about a student's intellectual profile, and can assist us to develop an appropriate educational response to his or her learning needs.

Assessing Levels of Giftedness

Even teachers who are more accepting of the utility of IQ testing may question the value of assessing a child who is visibly excelling in the classroom. "Why bother testing *him*?" they may say. "He's obviously gifted. What more do we need to know?"

Ironically, if such a teacher had, in her class, a child who wore a hearing aid but who still seemed to have considerable difficulty in responding to her questions and conversing with other students, she would almost certainly question whether his level of hearing impairment had been correctly diagnosed and what more could be done for him. She would have instinctively reacted to the concept of *levels* of a handicapping condition and the premise that appropriate interventions must be based on the level or degree of the condition.

Intellectual giftedness, when the school fails to make an adequate response, can indeed be a handicapping condition, and children in the extreme upper ranges of intelligence are at special risk for having their levels of giftedness misdiagnosed or tacitly ignored. It would be simplistic to define intellectual giftedness solely in terms of IQ scores; nonetheless, the intelligence quotient is a useful index of the relationship (and, in the case of the gifted child, the discrepancy) between mental age and chronological age. A moderately gifted 10-year-old with a mental age of 13 and thus an IQ of approximately 133 is "out of sync" with her classmates by a matter of three years before she has even passed through elementary school; however the exceptionally gifted 10-year-old with a mental age of 16 and an IQ of approximately 167 looks across a chasm of six years from the age at which she is capable of reasoning to the grade level in which she is likely to be placed on the basis of her chronological age. The IQ can assist us in understanding fundamental differences in mental processing between moderately and highly gifted students.

Many of the cognitive traits which characterize moderately gifted children appear at even earlier ages, and in heightened or intensified forms, in the highly gifted. Many highly gifted children develop, to an unusual degree, what Sternberg (1981), in his "componential" theory of intellectual giftedness, termed "transfer components," the skills required for generalizing concepts from one context to another. Roedell describes a 4-year-old boy who had been learning about set theory in math. Later, when someone asked him what he wanted to be when he grew up, he said, "Maybe I'll be a doctor; no, I think I'll be a fireman. No, I'll be a paramedic" (1989, p. 19).

Tessa, aged 8, a member of my own longitudinal study of children of IQ 160+ (see, for example, Gross, 1993) described her newfound, but deeply important, friendship with two other highly gifted girls as: "Something like a D major chord. Each of us is a separate note, but when you put us together something beautiful and better happens."

A striking characteristic of exceptionally and profoundly gifted children is their capacity for "dual focusing," the ability to process two sets of information simultaneously. Christopher, another subject in my own study, was assessed on the *Stanford-Binet (L-M)* at the age of 11 and passed virtually every

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item on the test, right up to Superior Adult Three. He scored at the ceiling of the test; however, a ratio calculation gave him an IQ of 200. The psychologist's assessment included some interesting analyses of Chris's styles of processing information.

(Christopher) works hard at trying to put every piece of information or every problem which he has to solve into some sort of category. Perhaps at his level of intellectual activity this is the most efficient way of handling the multitude of information and ideas which he handles each day. I have also observed (as have his parents) that Christopher is one of the few people who truly seems to be able to handle information in parallel. For instance, when he was working on quite a difficult question in the assessment, and was obviously thinking and talking on that particular problem, he suddenly interrupted himself to produce the solution to a previous problem which he felt he could improve on.

(Gross, 1993, p. 15)

Chris's younger brother, Jonathon, who also ceilinged out on the *Stanford-Binet (L-M)* at the age of 8 years 4 months, obtaining a ratio IQ of 170, has a similar cognitive style, although, as the psychologist found, this often manifests itself differently through Jonathon's puckish sense of humor.

Jonathon's verbal responses (were) of exceptionally high quality. He is a very fluent and articulate sort of child, who has highly developed abstract reasoning skills. It was also obvious that Jonathon has a well-developed sense of humour, too, and often he handled test items on two levels. Firstly he would answer the test question exactly as it was given at a very high level, but then he would give me a supplementary and much more humorous answer or interpretation of the item which he had just completed.

(Gross, 1993, pp. 17-18)

A busy teacher with 30 or more children in her class may not have time to examine, carefully, the cognitive style of her students, and the capacity to switch back and forward between two tasks as the mood takes one may be misinterpreted as distractibility. As I found from investigating the reading habits of the extremely gifted children in my study, Chris's capacity for dual focusing extends into this domain also.

Christopher, whose (reading) tastes (are) eclectic, ranging from Dickens and the Brontës through to the "Asterix" comics and a wide array of newspapers and journals, reads from an average of 22 sources per week. . . . (He) chooses to keep several books 'in play' at any time; he selects from several different and equally satisfying sources rather as in the course of a wine-tasting, the connoisseur of fine wines will savour, with appreciation and restraint, the bouquets of various great vintages.

(Gross, 1993, p. 162)

Again, a teacher watching Chris switching from book to book seemingly at random, or a school librarian perplexed by his borrowing habits, may have assumed that he was not "really reading," and not taken the time to discover the depth of his understanding and his phenomenal memory for detail. A skilled psychologist, who takes the time to write a sensitive and detailed assessment report, as did the psychologist who tested Chris and Jonathon, can provide the school with a wealth of insight and information. It was, in large part, due to these assessments that the boys' school became convinced of their remarkable abilities and placed them on individualized educational programs which included radical acceleration. Chris graduated from high school at age 16, and spent his junior year of college at Cambridge University, England, on a prestigious international scholarship.

Eight-year-old Tessa, who described her newfound friendship with two other gifted girls in musical terms, was also identified as highly gifted through IQ testing. Her first three years of school had been deeply unhappy. She was extremely bored in class and completed little of the repetitive and undemanding work that was presented to her, escaping, in her imagination, to a fantasy country which she peopled with great composers and writers such as Beethoven and Tolkien. She was friendless and socially rejected. Her teacher interpreted her inability to form productive social relationships with other children as emotional immaturity. Actually, like many highly gifted children, she had already passed through the "fair-weather friend" stage of friendship development appropriate to her chronological age and was already seeking the "intimate and mutually shared relationships" (Selman, 1981, p. 251) and affective bonding that characterize close friendships between girls several years older.

When Tessa's teacher looked at her frequently incomplete work, and her seemingly inept attempts to bond with other children, what she *thought* she saw was a "clingy" child with learning difficulties, and she recommended that Tessa repeat 3rd grade. Fortunately, the principal decided that Tessa should be IQ tested, and what the test revealed was a child

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who was functioning, intellectually, at the level of a 12 year old. Grade advancement and placement in a special class for academically gifted students gave Tessa access to academically challenging work and the companionship of other girls who thought and felt as she did.

The Problem of Ceiling Effect

Given the sensationalized media reporting of imagined defects in IQ testing, it is ironic that one of the few serious and genuine concerns is generally overlooked. Indeed it is seldom discussed outside the field of gifted education. This is the issue of ceiling effect.

Group IQ tests are designed primarily as screening instruments. Their function is to identify children at risk in school because of low or high cognitive ability, so that these children can be more comprehensively assessed on an individual test. Consequently, many group IQ tests have a "ceiling" around IQ 135 and a "floor" around IQ 65, and the reliability of the test is generally considerably lower at the upper and lower extremities of the test than in the middle ranges.

The problem is that, while very few psychologists would assess a child as having a score of IQ 70 or below on a group test and then fail to administer an individual test to assess the *degree* of intellectual disability, many will accept an IQ score of 130 or above gained on a group test and not even think of referring the child for further testing. Again, it's the old question of: "Why do you want to test him (further); you can *see* he's gifted!"

Trying to assess a highly gifted child on a group IQ test is a little like trying to measure the height of the Harlem Globetrotters on a pole which only goes up to 6 feet 6 inches, and then, when the coach protests that this won't tell him more than he can already see, defending our action by claiming that the pole we are using is a perfectly adequate measure for 99 percent of the population! This is a valid claim, so far as it goes, but it still won't tell us the height of the Globetrotters! Unarguably, we need a higher pole.

Individual IQ tests provide us both with that "higher pole" and higher degrees of reliability, but even here caution is needed. Even certain individual tests, such as the *WISC-III*, and the *Stanford-Binet Revision IV*, which have ceilings considerably higher than group tests, do not have items of sufficient difficulty to assess the full range of abilities of extremely gifted students.

"Trying to assess a highly gifted child on a group IQ test is a little like trying to measure the height of the Harlem Globetrotters on a pole which only goes up to 6 feet 6 inches..."

Until the mid 1980s, the *Stanford-Binet Intelligence Scale L-M* was generally regarded as the most reliable measure of determining very high levels of intellectual giftedness (Hagen, 1980). Unfortunately, the newer version, the *Revision IV*, is much less suitable for use with highly, exceptionally or profoundly gifted children, as researchers (Silverman and Kearney, 1989; Robinson and Robinson, 1992) report that it generates significantly lower scores for even moderately gifted students than did its predecessor. Indeed, it generates a punitive depression of scores for students in the entire gifted range, much greater than can be accounted for by the mean shift downwards on the new test to accommodate the higher performance standards of the 1980s. Silverman (1995) points out that the same raw score yields an IQ for average ability children approximately 8 points lower in 1991 than in 1960, whereas for gifted children the average downward shift is 31 points — a loss of one point per year! An additional problem in the construction of the *Revision IV* is that it has eliminated the mental age which, in its predecessor, could be used to calculate a ratio IQ score for exceptionally and profoundly gifted children. The many problems with this instrument have led psychologists with a special interest in the highly gifted to recommend that the *Stanford-Binet L-M* should be retained for use with children who are suspected of being very highly able (Vernon, 1987; Silverman & Kearney, 1992). Silverman and Kearney further recommend that in cases where a child obtains three subtest scores at or near the ceiling of any current IQ test, he or she should he retested on the *Stanford-Binet L-M* and ratio IQ scores computed for any child who scores beyond the test norms.

Off-Level Testing

Off-level, or above-level testing, is, as VanTassel-Baska (1996, p. 237) phrases it, "a simple but elegant solution" to the problem of ceiling effect in group achievement tests. In off-level assessment, a group achievement

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test in math, reading or some other academic subject, developed for, and normed on, older children, is administered to a younger gifted group. Since 1971 Stanley and his colleagues in the Study of Mathematically Precocious Youth (SMPY) have tested hundreds of thousands of mathematically gifted 6th-, 7th- and 8th-grade students using the *Scholastic Aptitude Test-Mathematics (SAT-M)* as an off-level test, and have used the results to implement, or advise on, appropriate educational responses (Stanley, 1996). Longitudinal follow-up studies of five cohorts of these students, totaling 5000 subjects, are providing a wealth of information about the cognitive and affective development of highly gifted young people and are planned to continue for 50 years (see, for example, Lubinski & Benbow, 1994).

Over the last 25 years the Talent Search model of identifying and responding to academically gifted students, inspired by Stanley's work, and employing off-level testing, has spread across the United States. The SAT-M and its companion test, the *Scholastic Aptitude Test-Verbal (SAT-V)* are often used as identification instruments; however, another test which is gaining popularity is *Explore*, developed by American College Testing in 1992. The University of Iowa uses *Explore*, an achievement test normed on 8th graders, to assess the achievement, in math, science, reading comprehension and English, of gifted students in 3rd through 6th grade (Assouline & Lupkowski-Shoplik, 1997), and it will be introduced to Australia in 1998 through the Australian Primary Talent Search (APTS) developed by the Gifted Education Research, Resource and Information Centre (GERRIC) at the University of New South Wales.

Different Levels of Ability Require Different Levels of Response

IQ and achievement testing can alert us not only to the fact that a child is gifted, but to the *level* or *degree* of that giftedness. Just as teachers of hearing impaired or intellectually disabled students are guided by the degree of the condition in their development of an appropriate intervention, so must teachers of the gifted select an appropriate match between the level of the child's giftedness and the interventions we develop.

In their quote which began this article, Benbow and Stanley (1997, p. 264) warned against the possible ineffectiveness of "the generic gifted program. . . . the 10% solution to a 100% problem." The 90-minute-per-week pull-out program may meet the needs of a student with a moderate gift for mathematics, but for a student such as Christopher, described above, who scored 710 on the SAT-M at the age of 11, prescribing pull-out is like putting a bandaid on a shark bite. There exists a veritable smorgasbord of grouping and accelerative procedures from which we can select, and blend, provisions to meet the needs of highly or extremely gifted students, and we must familiarize ourselves with these procedures and use them appropriately.

In his keynote address at the 1997 World Conference on Gifted and Talented Children, Gallagher compared teachers of the gifted to doctors diagnosing a condition and prescribing a remedy, and he described the "one-size-fits-all" generic gifted program as "a non-therapeutic dose."

He asked the audience to imagine that a drug is available which will treat a certain medical condition, but that patients with different degrees of the condition require different levels of dosage. The hospital, however, for budgetary reasons, administers the same level of dosage to each patient. For some patients this will be adequate therapy, and they will recover. For others, however, it will be a *non-therapeutic* dose. They are being treated, but the treatment will not help. The doctor, however, can assuage his guilt by telling himself that he has at least done something. He has "treated" the patient . . . hasn't he?

To define the therapeutic dose for gifted and talented students we must first diagnose the levels of the condition, and IQ and achievement testing can assist us greatly in this process.❖

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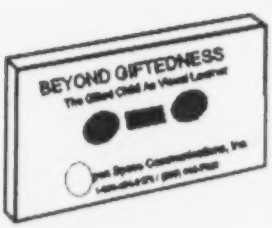

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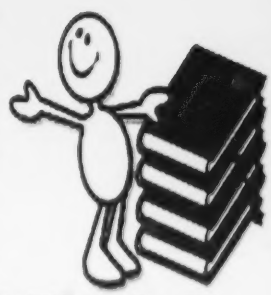

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Assessing Gifted Children

Julia Osborn

Assessing gifted children is similar to and different from assessing other children. Though the areas to be evaluated are similar for all, for gifted children, the techniques and tests used require some special adaptations. While most professionals are trained to assess many kinds of children, few are specifically trained in this particular area. The general perception is that these youngsters, with abilities and strengths in many areas, have no special needs, educational or otherwise, meriting serious clinical attention. For this reason, it is important that parents who suspect their child may be gifted search for a professional with experience in working with this population. Knowledge about these practices can help parents with this search and in understanding assessment results.

Testing versus Assessment

These two activities are frequently discussed and criticized together, when, in fact, they are quite different. As a psychologist, I have done both and will continue to do both for very different reasons. Testing, or the individual administration of a standardized test, means presenting test items according to very specific pre-set directions and following an exact verbal script. The results are usually reported as numbers. This is a limited activity, and the information it provides is similarly limited. Assessment, on the other hand, includes standardized test administration but goes well beyond it. Good test administration should be the same from person to person; that is, it should be independent of personal experience and viewpoints. Assessment, especially clinical assessment, is highly dependent upon training, theoretical orientation, personal experience, research knowledge and clinical experience. In good test administration, the tester should not have a major impact on the results; in assessment, the person performing that task does have a major impact on the final result. For these reasons, assessing children is part science and part art. The science part is straightforward and largely concerns testing. The art part is difficult to describe, difficult to teach and essential.

Age of Child

All tests and assessments vary with the age of the child, as we expect children will do different things at different ages. In general, we choose an instrument which has been standardized with children of a specific age, without regard to their ability levels. Yet, gifted children will accomplish a variety of things earlier than other children or will accomplish them at a higher level than their age peers. Assessment must adapt to this reality. There are two basic strategies for making this adaptation, the easiest of which is to use a test standardized for older children (this is the out of level testing that is used in the talent searches). A second strategy is to informally look for behaviors and skills that usually appear in older children. For example, most children do not read before entering school, and therefore most assessments of preschool children do not routinely include reading. Some gifted preschool children do read early, and an adequate assessment should include measures of reading; for instance, giving the Gates MacGinite Reading Test to a child much younger than those in the norming sample. Another strategy for assessing reading is simply to take an inventory of the books a child has read in the previous six months. The most important factor is not to make assumptions about

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Assessing

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a child's level of accomplishment based upon age or grade but to select test materials that will permit a young child to demonstrate high-level skills.

Parent Information

Each child, gifted or not, has his or her own history. When a child is tested in an admission process for private schools or gifted programs, parent information is often not collected. In assessment, however, the first step is to interview parents to obtain the child's history in the areas of general development, education, health, social and family interactions. There are many myths about parents of gifted children — that they are pushy, over-involved and that they do not set appropriate limits and boundaries around their children. Professionals, and there are some, who believe these stereotypes generally omit this first, essential step. A parent should be wary of any professional who plans to evaluate a child without taking a developmental history.

The careful collection of information from parents, via report forms, checklists and most importantly direct interviewing, becomes the foundation upon which the individual nature of the assessment is built. Parents, speaking to a professional for the first time, should feel free to say they think their child may be gifted. They should then hear a question such as, "Why do you think that your child may be gifted? What does he/she do that suggests this?" — thus opening the door for a frank and complete history of the child's development and behavior. As with any interview technique, the value of the information obtained depends upon the skill and biases of the interviewer. Several remarkable studies have had a particular impact on my thinking about the developmental pathways of gifted children (Bloom, 1985; Gottfried, Gottfried, Bathurst & Guerin, 1994; Gross, 1993; Hart & Risley, 1995; Roedell, Jackson & Robinson, 1980).

Intellectual Ability

In the academic world, there are debates about the meaning and value of intelligence tests in general; at parent and school meetings, I have been asked many questions about intelligence tests and the meanings of different score patterns. After working with hundreds of children, my own view of the value of intelligence tests is this: when I administer an individual test, I gain necessary but not sufficient information about an individual child. Among the most commonly used tests for assessing the gifted are the Weschler Intelligence Scale for Children-Third Edition (WISC-III), the Stanford-Binet: Fourth Edition (SB:IV) and, yes, the Stanford-Binet: Form L-M (SB:LM). I use all three at different times. For gifted children, I have frequently observed that a score on one cannot be converted to a score on another by means of any formula because the information provided and the scores they generate are not interchangeable.

If I think that a gifted child may have a learning disability, I use the WISC-III, based on my clinical experience and because there is a body of useful research on this application (Fox, Brody & Tobin, 1983). If I am interested in a school-age child's high-level math reasoning or visual-spatial reasoning, I use the SB:IV, as I have had numerous experiences with young elementary school children who demonstrate skill in subtests normally reserved for older children, especially the subtests of number series, equation building, paper folding and matrices. However, both the WISC-III and the SB:IV have a serious general limitation due to their low ceilings. The tests were designed to be most useful for children closer to average and are less useful for those far from average (e.g. retarded or gifted).

A word about the SB:LM is in order. Many people mistakenly believed that the publication of the SB:IV meant the SB:LM should not and could not be used. There are serious and well documented reasons for continuing to use this test (Gross, 1993; Silverman & Kearney, 1992). I especially like the SB:LM for its very high-level verbal reasoning items which, in my experience, tap an ability to think, verbally and mathematically, in a complex way. Several years ago, there was a lively debate about the relative merits of the SB:LM and SB:IV in the identification of gifted children, with some favoring the use of the SB:IV and others the use of the SB:LM (Robinson, 1992; Silverman & Kearney). Putting the issue to the clinical test, by administering both tests to the same children, I have found that it is difficult, sometimes impossible, to distinguish among gifted children who are functioning at different intellectual and educational levels. To put it simply, if I want to know whether or not an individual child fits the characteristics of an exceptionally gifted child, as presented by Gross, then I must administer the SB:LM. Dr. John Wasserman, Director of Psychological Assessments, at the Riverside Publishing Company, reports plans to incorporate some of the best features of the SB:LM into the formation of a new test, the Stanford-Binet: Fifth Edition.

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However, until several years from now when that new test is ready, both the SB:LM and SB:IV may be used after careful professional consideration.

Educational Ability

One of the clear ways in which the gifted differ from other children is in the ease and speed with which they master academic skills. The more extreme a child is in intellectual ability, the more likely it is that he/she will not fit in well with a standard curriculum. For that reason, I find that it is critical to evaluate the child's ability to decode words, comprehend printed passages, understand math processes, complete math calculations, produce legible print or script and write compositions. Gifted children, in the early school years, vary widely in the degree to which these skills are developed. Of the children I have seen, highly and exceptionally gifted children, often, but not always, have some school skills that are much more advanced than the skills of more moderately gifted children. These children, in turn, have school skills that are much more advanced than the skills of average children.

To convincingly document extreme skill development in any of these areas, it is essential to use a test with a very high ceiling, as schools often do not possess or obtain this information. This occurs for several reasons: first, many schools do not routinely test all their elementary children until they reach a preestablished level, which can be as late as 3rd or 4th grade; second, the types of standardized, normed, group-administered tests given in schools to classrooms of children often have such low ceilings that they cannot distinguish well among the children in the top 3 to 5 percentiles.

Assessment, unlike testing, seeks to evaluate carefully the academic levels of children in the top 3 percentiles on standardized tests. The talent searches, which are available for 5th, 6th and 7th graders are very important tools in documenting highly developed school skills. For elementary children in 1st, 2nd, 3rd and 4th grades, a good assessment practice is the use of individual tests that go up to a 12th grade level of difficulty. By using such tests, there is no preconceived ceiling imposed on a child by the nature of the test construction. There are several high-ceiling, individually administered academic tests; for example, the Woodcock-Johnson and the Peabody Individual Achievement Test. I prefer the Kaufman Test of Educational Achievement, as it includes what, I feel, is a more realistic assessment of reading. In the KTEA, the child is required to read and demonstrate comprehension of printed paragraphs; in many other tests, the child is merely asked to fill in a missing word in a sentence.

Other Abilities

Gifted children often possess abilities in areas that are well outside the realm of standardized tests — musical, artistic, creative writing, the asking of scientific questions, to name only a few. Using these abilities, children may complete activities or undertake projects which no one their age may have imagined or attempted. In order to understand these qualities and to begin to appreciate the importance of these activities in the lives of these children, I have had to be creative in my assessment strategies. Certainly, portfolios of art and writing are useful, as are videotapes of performances and activities. Constructions of all types have made an appearance in my office, in person or captured on film. Children's efforts in these areas often represent hours of committed labor and may indicate unusual and emerging life interests. As these activities are often undertaken outside of school, again, parent information is vital. It is often equally important to brainstorm with parents about the ways they can encourage and support their children in these activities. There is no simple, standardized, normed method for accomplishing this; consequently, this is not a testing activity but another factor crucial in assessment.

The Role of Intuition

In discussing the assessment of children, this topic is perhaps the single most important one, as well as the one most difficult to describe. The more children I evaluate, the more I depend upon this quality. While it is important throughout the entire process, I am most aware of it during the first minutes after meeting a child. Mostly, it resembles a sensation of waiting, of alert waiting for the child. At those moments, I try to set aside all I have heard or read about the child and simply respond to what occurs. To do this successfully, I have to concentrate fully and I often respond in ways I have not preplanned. To a great extent, I depend upon the initial impressions, feelings and ideas that occur to me in the moments after we meet.

The most useful preparatory technique is to tell parents to help the child select something important or well-loved to bring to the session. Allowing them to choose gives them an initial sense that their needs and opinions will be valued, and it gives me a glimpse at their personalities, providing an immediate and engaging topic for conversation. This activity also gives children some small area of power over a process that will be largely outside of their control. Finally, it communicates the message

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Assessing

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that at least part of the assessment will be about what they like and value.

Children choose to bring in photographs, trophies, books, stuffed toys, construction projects, art or other products; responding enthusiastically is easy and welcome. Other children, sometimes the ones who bring nothing, make it plain they would rather be anywhere else in the world. At times, I find myself saying almost before I say hello, "You look like you'd rather be anywhere but here." Children are usually grateful for the acceptance it implies. Other children, painfully shy, look like they wish they could just disappear. Sitting down in the waiting room, chatting with their parents, inviting their parents into the testing room, allows children to minimize interaction with me. By directing attention toward their parents, they feel less pressure to interact and will often ease themselves into the conversation. For children who are quiet or hesitant to speak, allowing periods of silence and offering nonverbal toys (origami, puzzles, markers and paper) helps smooth the transition into the assessment process. Other children need to have a brief introductory session and return later to a now somewhat-familiar place for longer, more focused sessions. While some of these variations can be anticipated in advance by discussions with parents, others are, in essence, spontaneous.

My Subjective Experiences

I have found that assessing gifted children is a qualitatively different experience than assessment of other types of children. First of all, it takes one to two times longer to administer high-ceiling tests. The more extreme the ability of the child, the longer the session. The reasons for this are straightforward. Gifted children generally answer more questions correctly, produce more elaborated answers, ask more detailed questions and become more deeply engaged in testing than other children. Their tendency to be more positive and engaged during the testing means that they are more difficult to disengage and that they are more reluctant to leave at the end. More often, breaks and stopping points must be imposed.

Also, the interpersonal dynamics in the testing sessions are more complex. I often have the sensation that I am being closely observed and that the nuances of what I say and do are being noted. In short, I find that I need to be particularly focused, alert and engaged when assessing gifted children. I also need to offer more explanations for why I do what I do. Experience has taught me that if I do not offer explanations, children will invent their own, sometimes quite incorrect explanations, of what I am doing or thinking. Though I find it quite enjoyable to evaluate gifted children, I also find it quite demanding.

Summing Up

All assessment processes involve providing information to parents and often to teachers. In the case of gifted children, I find that their parents ask more questions, expect more fully developed answers and appreciate references to relatively complex reading material. Teachers and parents alike often have to cope with feelings of uncertainty about how best to respond to a child's needs, and questions of best educational practices are constantly raised. Teachers and parents often appreciate straightforward information on practices like subject matter acceleration, grade skipping, radical acceleration and home schooling. Frequently, there is an urgently felt need to solve educational problems of fit, and there is a great need for information on a variety of successful techniques. Obtaining and sharing this information is an important part of the assessment process. In many fascinating ways, the growth of the Internet has given parents quick access to each other and to many information sources. The resourcefulness and persistence of parents constantly impresses me as they seek appropriate adaptations for their children in the schools. My role, at that stage, is to provide links between the parent, the school and the body of knowledge about promising educational practices. In this regard, materials supplied by ERIC Clearinghouse on Disabilities and Gifted Education (800-328-0272) and the work of the National Research Center on Gifted and Talented (203-486-4676) have been invaluable, and I encourage parents to obtain materials from both sources. It is my opinion that no assessment is complete until some meaningful changes have taken place in the daily life of the child; however, it is the parents who must see to it that those changes take place. ❖

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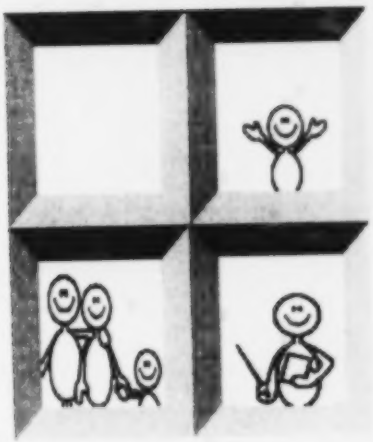

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Intelligence Revisited

The Nature of Intelligence

Barbara Carroll

Intelligence. What is it, exactly? Is it even possible to know, to sufficiently characterize such a commodity, a phenomenon? It is a question for the ages perhaps, a meaty line of inquiry for philosophers and psychologists. But here in this forum, let us take as our purpose a line of questioning not quite so general and consider instead the nature of how intelligence is viewed more practicably today, in terms of our children, their lives, our society and in the intersection of those momentous concerns.

Traditionally, and speaking simplistically here, intelligence has been viewed from the framework of a cause-and-effect perspective: Children have brains; those with *big brains grow up to be scientists or doctors* or policy makers, and those with smaller ones become clerks, janitors, the perpetually unemployed. Elitist? Yes, and certainly untrue. This viewpoint also presupposes a standard and outmoded definition of intelligence as something one is born with, which cannot be changed.

Unfortunately, the popular use of testing in schools and psychologists' offices has not "unmuddied the waters" of what intelligence actually is, how knowledge of children's intelligence — and, consequently, individual potential — can be used by teachers, parents and students.

Today's over-reliance on standardized testing tends to blur the lines between the amount of knowledge possessed by students and, as Wiggins (1993, p.202) states, "...whether students have the capacity to use wisely what knowledge they have." According to Wiggins (p. 200), "[T]here is an inescapable tension between the challenges presented by contextualized performance and conventional, large-scale, generic testing. Understanding is not cued knowledge: performance is never the sum of drills; problems are not exercises; mastery is not achieved by the unthinking application of algorithms." This man's words make sense to me. The purpose of education, he continues (p. 202), "is to help the individual become a competent intellectual performer, not a passive 'selector' of orthodox and prefabricated answers." As I see it, an unrealistic zeal to assess kids, boxing them into inappropriate categories, can be counterproductive to that purpose.

This field, a hybrid one created of crossing research on intelligence and the education of our youth, seems rife with opinions, some reaching backwards for direction, ideas and support, some inclined towards newer, uncharted territory. Among the latter group, Gardner's theory of multiple intelligences challenges the traditional notion of IQ. He believes that the intelligence test is a "disembodied language-logic instrument," which doesn't "inform us about our other intelligences" (Checkley, 1997, p.10). To his own initial seven intelligences (linguistic, logical-mathematical, spatial, bodily kinesthetic, musical, interpersonal and intrapersonal), Gardner has now added naturalist intelligence, the capacity to classify nature. He states, "Intelligence refers to the human ability to solve problems or to make something that is valued in one or more cultures." (p.8)

In her mostly critical review of the controversial book, *The Bell Curve: Intelligence and Class Structure in American Life* (Hernstein & Murray,

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Intelligence

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1994). Rogers (1996) submits some "givens," predicated on recent research in gifted literature. These echo some of the newer thinking concerning human intellect and seem quite sensible: "IQ is not the same thing as 'intelligence,' merely one form of it." An individual has a variety of perspectives that must be considered along with intelligence, "...including, but not limited to, social development, emotional development, personality, perceptual ability, motor development, verbal ability,...spatial development, and talent..." (p. 253).

In addition, Clark (1992) makes solid, logical sense by defining intelligence as the aggregate of an individual's cognitive, affective, intuitive and physical functioning. It is enhanced or inhibited by the interaction between the genetic pattern and the opportunities provided by the environment" (p. 7). She also believes that intelligence is dynamic as opposed to fixed, dependent on environment interacting with heredity. In her view, we therefore must be concerned with the environment provided and not leave "education to chance" (p. 69).

In discussing intelligence and giftedness, Clark states that those who are highly intelligent are more likely to cope with society's demands. She continues, "But rather than consider possession of this attribute as superior, shouldn't we view high intelligence as being farther along the way to being all a human can be?" In whatever domain that may be. Clark uses the example of two persons headed for the same destination, with one being 40 miles away from it, while the other is 60 miles out. She asks if the first person is superior to the second because he is physically closer to the end point and concludes by commenting that the two people "see different things, they discuss with a different perspective, and depending on their capability and interests, they may even end their journey at different points." Her implication is that one's destination may change along the course of the trip, according to individual wishes and needs. Placement of the two persons in an "artificial hierarchy of better or worse," says Clark, "does not adequately differentiate their experience" (pp. 9-10).

When I think of intelligence and its everyday utility or application in the "real world" in which we all live, a couple of good friends come to mind. Kristin, a woman in her forties, with a formidible ivy education and many other accomplishments on her resume, works in the upper echelon of a major automobile company designing components, and she has been responsible for major innovation in her industry. She and I share an interest in fine art and often go together to galleries and exhibits. On one such recent excursion, we spent a long, silent period absorbing the near-perfection around us. "Creative, beautiful work like this," she finally commented wistfully, "and I spend my days sketching car parts." We sighed together. I knew many years ago Kristin had set aside the idea of art school for college. How unfortunate that she doesn't feel she has fully utilized her creativity and her intellect.

Joe lives in my building, and several times a week he and I jog together in the early mornings. I am constantly in awe of my friend's sharp mind, as well as his comfortable sense of perspective about his life. I don't know Joe's IQ score. He probably doesn't either, most likely never having been tested. I know he attended a junior college in the midwest and for a number of years now has worked in a community outreach shelter. He spends his non-working time volunteering as a "big brother" for disadvantaged teens. Joe's "career" is in helping others. It would seem to some that he has not utilized all his obvious and abundant intelligence to the fullest; on the contrary, Joe is precisely who and what he wants to be. Unlike Kristin, his life seems fulfilled.

"As I see it, an unrealistic zeal to assess kids, boxing them into inappropriate categories, can be counter-productive..."

As I sort through these various points of view on what intelligence is, how it is determined and characterized and think about how it applies today and to today's children, moving towards their own adulthoods in the next millennium,

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Intelligence

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more questions than answers come to mind.

• Does knowing children's IQ scores really make adults aware of the actual intelligence children possess, thus conferring an understanding of their potential so that they can be directed into appropriate life choices? Are those Big Brother's steps I hear behind me? Isn't it possible such knowledge can lead to unrealistic expectations for children, pushing them into areas where they may not wish to and should not go?

• From there, we might logically ask where do children's motivation and interests enter into the picture, and into this discussion of IQ scores and intelligence? If young people desire to direct their intelligence to non-academic career pursuits, (at least non-academic from parents' and educators' perspectives), should they be encouraged to do so?

• If, as Clark (1992) believes, intelligence can grow and change in individuals, should adults not worry so about grade levels and academic challenge? Is it reasonable to think that children who are well-adjusted socially and emotionally, comfortable with who they are and what they want to do, will use the intelligence they possess to the degree they want and need to, and welcome or solicit adult intervention when they need or want it?

These seem to me worthy questions to ponder, if not to solve, for now and the future, for parents, educators, psychologists and philosophers. ❖

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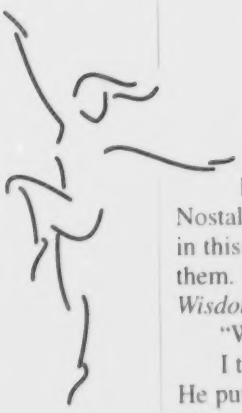
ParentSpace

Laura Goodman

Do you ever get so caught up in wondering about, worrying over, advocating for, discussing the everyday plight of your child that you lose sight of some things? Day-to-day life with gifted kids can sometimes result in a case of situational myopia. We get so focused on what they're doing and on what we're doing to help them do it, that it's easy to lose sight of the bigger picture — that all this is a process, a means to an end, with the goal being to launch our children into their own autonomous and authentic adulthoods.

I've been thinking lately about bigger pictures and what happens to gifted children when they aren't children anymore, what becomes of them. There are, of course, the celebrated stories of the big-name "gifteds" — the Bill Gateses, the Toni Morrisons, the Stephen Hawkings, the Madeleine Albrights, the Albert Einsteins. But what of the more garden-variety, low-profile gifted children like you and me? Children of soaring IQs who haven't made it into the brightest spotlights but who have made good lives for themselves and go about the daily task of living them?

Daniela Kuper is one such grown-up gifted child who lives in Boulder, Colorado and makes her living writing advertising copy and her life worthwhile by writing fiction. I asked her to write of her gifted-child experiences and her life and gave her carte blanche with the task. It may not be what you expect to read in the pages of *Understanding Our Gifted*, but I find it a brave and honest account and one that can, on several levels, serve us as parents of extraordinary children. Here is what she has to say.



Hungry Child

by Daniela Kuper

It was the late '50s. We kept our leftovers in those heavy lidded glass containers you find now in thrift stores next to the wooden handled egg beaters and Fiestaware selling for 50 bucks a shot. Nostalgia is big business. I know a man who decorated his entire house in this period. Record player. Records. Cabinets and all the stuff inside them. In his bathroom you can skim defunct magazines like *Argosy* and *Wisdom*. He invited me for dinner and I could barely swallow.

"What's the matter? You don't like halibut?" he asked.

I told him the fish was fine, it was the era that gave me a bellyache. He put down his fork and we went one for one on memories and memorabilia.

Ike? Howdy? Hop-a-long? Sputniks and matching bubble gum? Duck and cover? Sure, I told him. Fine by me.

He pressed for more. I told him the usual business about rabid conformity, severe blandness, the snooze years, etc., etc.

"You were 7 years old. What did you care about all that?"

He was right. There was something else. Something disturbing I didn't even have a clue about.

I was a happy kid. Hungry, smart-mouthed and curious. I read a book a night under the covers with my flashlight. I wanted more and

- continued on next page

***Laura Goodman** is the editor of Understanding Our Gifted, a fiction writer, and the homeschooling parent of a gifted child.*

faster. I wanted to know why, not how. How was boring. Eugene Field Public School did not have a lesson plan for *why*. Sometimes I pushed too hard, asked too many questions and came home with a note pinned on my dress. I remember one by heart.

Your child is a bold, impudent creature. Make an appointment to see me.

I spent a lot of time in special offices getting tested for this and that. How many words could I say in a minute? How many problems could I solve? Did I see the shapes? The patterns? The things behind the things that obeyed unseen laws?

Evidently I could see just fine. I skipped a grade and my parents were given a pamphlet called, "How to Raise a Genius." They responded to this by teaching me to type. I became a very good typist. I am banging out this piece right now, as fast as any corporate secretary. I never knew about the genius part. I believed my parents got called into school to make me a typist.

A few more years. More testing, more parental visits and nights when they spoke in Yiddish so I wouldn't understand. They did not seem pleased to keep getting singled out. They got another pamphlet, I skipped another grade and this time they enrolled me in a ceramics class at the Loyola Field House. We made molds of clowns or flowery baskets. Then we painted them. I remember wishing for a new mold. A horse or maybe a car. My parents told all the relatives I was taking art lessons.

By high school, I was lost. The youngest in class.. The flattest chest. The earliest curfew. I didn't understand the information coming at me. I didn't care about it and I stopped asking the Why question. Chemistry. French. Earth Science. Algebra. I was a body in a chair and my grades reflected this. Out of 500 students in my class, I graduated 450th. Below me were the boys who never even went to school.

From 7th grade until forever, my parents were furious with me. Their life theme has been: the little girl who never lived up to her potential. What about the pamphlets? The soaring IQ? The typing? Clearly there must have been some mistake. I was no genius. I was an idiot. A nincompoop. They said these words. I remember these words.

When I turned 40, my mother came for a let's-make-peace-in-the-family visit. It had been a rough road between us all those years. My father and I barely spoke at all.

She and I made a big lunch, rented "Trip to Bountiful" and sat on the couch together holding hands. It felt so good, having my missing mother back again.

"There is something interesting I never told you. Way back when, they told us to pull you out of grade school. They wanted us to send you to Frances Parker Day School. Can you imagine?"

"What kind of school is that?"

"Private school. Very expensive."

I was distracted with my new-found mother love. Maybe we would take a walk. Bake something. I would tell her the truth about my ex-husband. And about fiction writing, the one thing I finally found that came straight from my heart, used all of me and felt like home. Possibilities were appearing all over the place, but she seemed to be waiting for some reaction.

"They told us, at the time, that you were a gifted child. Ve-ry creative, they said, with your own way of thinking, of seeing the world. I certainly remember that bit."

We both laughed, although I was beginning to feel uneasy. I had always been a difficult child, but why harp on this now?

"So why didn't you send me to that school?"

"Too much money. How could we have afforded it? And, at the time, we didn't want to encourage you to be different. You know, be an artist or something. Believe me. We had your best interests at heart."

This was why she had come. She came to spill the few words they had hidden from me, at the time. Gifted. Different way of seeing. Special school. It took me a while to see how big this was, this key they'd kept all to themselves. I am still seeing it.

I don't know how life would have turned out if the '50s had been more like the '90s. If my parents had not been afraid. If I had been valued, even encouraged for how my mind worked. If, if, if.

It has taken me over 40 years to accept my intellectual and creative eccentricities, and to look for friends who do the same. It began the first time I wrote a story without censoring, without translating it into "the other language," the one I always assumed people wanted to hear. It was a complete shock to see it published.

A dozen stories later, I found myself talking to an editor who is interested in publishing my novel. She said she reads thousands of stories to discover one or two that stand apart, that are in some way different. I tell this to my son and daughter, so their lives will not be choked by convention. I tell them that in middle age, their mother has become a hungry child again. ❖

Surfing the Net

Sandra Berger

Academic Contests, Competitions, and Olympiads

If you have been following this column, you know that we are on a grand tour of academic sites, with the goal of finding material to enhance curricula. We have visited a number of sites for mathematics and science, and now we'll take a short detour. However, we'll return to academic sites in the next issue of *Understanding Our Gifted*. Technology and the Internet have had an impact on almost every aspect of education. The availability and dissemination of information has broadened, resulting in an increase by disseminators. This is particularly true of student competitions, an area where obtaining information previously required hours of research and a little luck.

Why should gifted students participate in competitions, you may ask, particularly when so many of them are already feeling stressed? For several reasons: 1) If a student has reached a level of competency in an area of interest, entering a competition may provide feedback as to how the student compares with others interested in the same area; 2) to exchange ideas with others in an area of interest; and 3) to motivate a student to streich to a new level of challenge. Further, if a student pursues an interest for many years, entering competitions may eventually result in monetary or scholarship awards.

Regional and national competitions can be found in most fields, including math, science, computer programming, writing, engineering, geography, environment, art, music and dance. However, care must be taken to avoid the stress that can accompany competitions. When information about competitions is made available to students, when entering a competion is an option rather than a requirement and when students can freely choose to enter or abstain, the results can be highly positive. This is particularly true for highly gifted students whose level of competency in some areas has been unmatched among peers. Entering a competition may be the only way to obtain realistic feedback on ability.

Books (not Internet resources)
NASSP: A selected list of competitions and activities can be obtained for a fee from National Association of Secondary School Principals (NASSP).
The Advisory List of Contests and Activities
1906 Association Drive
Reston, VA 20191
703-860-0200/FAX 703-476-5432.
http://www.nassp.org/

Academic Competitions for Gifted Students: A Resource Book for Teachers and Parents
Mary K. Tallent-Runnels & Ann C. Candler-Lotven, 1996. Corwin Press, Thousand Oaks, CA.

Sandra Berger *is the Information Specialist for Gifted Education at the ERIC Clearinghouse on Disabilities and Gifted Education in Reston, Virginia. She is the author of College Planning for Gifted Students.*

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Surfing the Net

Continued

Academic Contests and Competitions on the Internet

Academic Competition Home Page (K-12)
http://k12.pisd.edu/currinst/accomp/exp.htm
This web site, sponsored by the Plano, Texas Independent School District, has links to Odyssey of the Mind, Bright Ideas (an elementary school student invention competition), Future Problem Solving, Middle School Whiz Quiz, High School Whiz Quiz, the Academic Pentathlon, the Academic Octathlon, the Academic Decathlon, Mathcounts, Mock Trial and more. Look for a calendar under "Other Competitions."

American School Directory
The Internet Guide To All 106,000 K-12 Schools
http://www.asd.com/
If you are looking for information from a particular state, try this directory.

Contests and Competitions
http://www.bergen.org/Contests/
This site, sponsored by Bergen County, New Jersey, lists a great many competitions that are not listed in any other Internet directory. Be sure to explore each link.

Financial Aid Information Page
http://www.finaid.org/
http://www.finaid.org/finaid/awards/contests.html
This site is sponsored by the National Association of Student Financial Aid Administrators and has links to a wide selection of financial aid sources and contests.

Global SchoolNet Foundation
http://www.gsn.org/
This site lists a number of competitions for K-12. Look for the International Schools CyberFair '98, in which students create World Wide Web sites that show off what's special and different about their own community.

Odyssey of the Mind (K-12)
http://www.odyssey.org/
The Odyssey of the Mind School Program fosters creative thinking and problem-solving skills among participating students from kindergarten through college. It features an annual competition component at local through international levels. Students solve problems in a variety of areas – from building mechanical devices such as spring-driven vehicles to giving their own interpretation of literary classics. Through solving problems, students learn life-long skills such as working with others as a team, evaluating ideas, making decisions and creating solutions, while also developing self-confidence from their experiences. OM Association also develops activities to integrate these skills into regular classroom curricula. OM Association, P.O. Box 547, Glassboro, NJ 08028.

Questions Unlimited (9-12)
http://www.qunlimited.com/index.html
Look for QuizNet, an online academic competition.
P.O. Box 14798, Columbus, OH 43214. 800-868-1518/FAX 614-846-1755.

ThinkQuest (4-12)
http://io.advanced.org/thinkquest/
http://www.advanced.org/ThinkQuest/
ThinkQuest is an annual contest that challenges students, ages 12 to 19, to use the Internet as a collaborative, interactive teaching and learning tool. ThinkQuest Junior is for students in grades 4-6.

Yahoo
http://www.yahoo.com/education/Academic_Competitions/
Yahoo is a searchable Internet directory that categorizes and lists Internet web sites.

United States Academic Decathlon
http://www.usad.org/
The United States Academic Decathlon is a team competition in which students match their intellects with students from other schools. Students are tested in 10 categories: Language and Literature, Mathematics, Science, Social Science, Economics, Essay, Fine Arts, Speech, Interview and Super Quiz. Gold, silver and bronze medals are awarded for individual events and total scores. Winners at various competitions around the country advance to the next level. State winners compete in a national championship.

YouthNet
http://yn.la.ca.us/
YouthNet lists a number of competitions and provides links to their home pages.

Mathematics and Science
If you're interested in mathematical problem-solving, visit the site that claims to list all sources of mathematics problems on the Internet.
http://www.mathpro.com/math/mathCenter.html

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Surfing the Net

Continued

Abacus International Math Competition (4-8)
http://www.gcschool.org/abacus.html
This competition is for individuals, rather than school teams. A new set of problems is offered each month for each grade level. Participants get five points for a thorough solution with reasonings, less points for a partial solution or solution with no reasoning, and more points if they find more different solutions or prove more than required. Students send their answers to an e-mail address. The home page lists all the problems from previous months so you can get an idea as to what is entailed. At the bottom of the home page, there's a link to a page that tells all about the abacus.

American Mathematics Competitions
http://www.unl.edu/amc/
The American Mathematics Competitions (AMC) seek to increase interest in mathematics and to develop problem solving ability through a series of friendly mathematics competitions for junior (grades 8 and below) and senior high school students (grades 9 through 12).
Dr. Walter E. Mientka, Executive Director, American Mathematics Competitions, University of Nebraska-Lincoln, P.O. Box 81606, Lincoln, NE 68501, 402-472-2257/ FAX 402-472-6087.

The International Mathematics Olympiad (IMO) (9-12)
http://olympiads.win.tue.nl/imo/
http://www.unl.edu/amc/usamo.htm
An annual mathematics competition for high school students. It is one – in fact, the oldest – of the International Science Olympiads. Its purpose is to discover and challenge secondary school students with outstanding mathematical talent – a combination of superior ingenuity, knowledge and computational expertise.
http://olympiads.win.tue.nl/index.html

International Math Olympics
http://yn.la.ca.us/math.oly/mo.html
The International Math Olympics encourages all students in a class to learn addition and multiplication facts with both accuracy and speed. There are individual events and class average events to encourage team spirit and effort by all class members. During the annual Math Olympics competition in the spring of each year, certificates are awarded to all classes that participate and ribbons are given to top three winners in all events. The bimonthly Math Olympic Warm-Ups are practice competitions that help teachers and students prepare for the main event.

Mathcounts (7-8)
http://mathcounts.org> or <http://thechalkboard.com/MC/
A national math coaching and competition program that promotes math achievement through grass roots involvement in every U.S. state and several territories.
1420 King Street, Alexandria, VA 22314.

National Science Olympiad (K-12)
http://www.geocities.com/Cape Canaveral/Lab/9699/
http://www.geocities.com/
More than 12,000 schools from all the states participate in this national competition that has been held every year since 1985. The Science Olympiad tournaments are rigorous academic interscholastic competitions consisting of a series of individual and team events which students prepare for during the year. The competitions follow the format of popular board games, TV shows and athletic games. Events are well balanced between the various science disciplines of biology, earth science, chemistry, physics, computers and technology. There is also a balance between events requiring knowledge of science facts, concepts, processes, skills and science applications. In addition, during the day there are open house activities which consist of science and mathematics demonstrations, activities and career counseling sessions conducted by professors and scientists at the host institution occurring concurrently with the events. This year's national competition will be held on May 16, 1998 at Grand Valley State University in Allendale, MI.
http://www.nso98.gvsu.edu/

USA **Computing Olympiad**
http://usaco.uwp.edu/
Computing Olympiad Challenge of the Week
http://usaco.uwp.edu/pow/pow.html
The USACO is an annual computer programming competition for high school students in the United States. The goal of the USACO is to select a team of four students to represent the United States in the annual International Olympiad in Informatics (IOI), an international computer programming con-

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Surfing the Net

Continued

test similar in structure to the Math, Physics and Chemistry Olympiads. Prior to the International Olympiad, three Internet contests (fall, winter, spring) are held to foster competition, recognize outstanding performance and increase the level of expertise of pre-college programmers.

Westinghouse Science Talent Search
http://www.westinghouse.com/found/science.htm
For information, call Science Service 202-785-2255/ FAX 202-785-1243.

Humanities and Social Science

Forest Products Week Essay Contest (K-12)
http://rmcclos.idbsu.edu/~iseee/LINKCONTESTS.htm
Forest Products Week is the third week of October each year. Through the Forest Products Week Essay contest, students win a savings bond for themselves and money for their classroom by writing a winning essay about the year's theme.
Idaho Forest Products Commission, P.O. Box 855, Boise, ID 83701
208-334-4061 *plt@micron.net*

Longmeadow Journal Literary Competition for short story writers (ages 10-19)
I found this announcement on the Internet, but they do not have an Internet presence.
The Longmeadow Journal, c/o Robert and Rita Morton,
6750 Longmeadow Avenue, Lincolnwood, IL 60646. 312-726-9789.

National Council of Teachers of English Promising Young Writers Program (8)
http://www.ncte.org/
http://www.ncte.org/grants/young.html
The Promising Young Writers program represents NCTE's commitment to early and continuing work in the development of writing. The program, in its 13th year, was established to stimulate and recognize students' writing talents and to emphasize the importance of writing skills among 8th-grade students. 1111 Kenyon Rd., Urbana, IL 61801.

National Geography Bee (4-8)
http://www.nationalgeographic.com/society/ngo/geobee/
Each year thousands of schools in the United States participate in the National Geography Bee using materials prepared by the National Geographic Society. The contest is designed to encourage teachers to include geography in their classrooms, spark student interest in the subject and increase public awareness about geography. Schools with students in grades 4 through 8 are eligible for this entertaining and challenging test of geographic knowledge.
National Geographic Society, 1145 17th St., NW, Washington, DC 20036.

National History Day (6-12).
http://www.thehistorynet.com/NationalHistoryDay/studentguide.htm
Learn the skills and techniques of the historian by participating in a year-long contest in which students compete at increasingly challenging levels. The culmination is the national competition.
National History Day, 0119 Cecil Hall, University of Maryland, College Park, MD 20742.

Scripps National Spelling Bee (1-8)
http://www.spellingbee.com/
The purpose is to help students improve their spelling, increase their vocabularies, learn concepts and develop correct English usage. Each local sponsor organizes a spelling bee program in its community, usually with the cooperation of area school officials. The champion of the local sponsor's final spelling bee advances to the national finals in Washington, D.C. ,P.O. Box 5380, Cincinnati, OH 45201.

Seiko Youth Challenge (environmental problem solving)
c/o The drbGroup, 1234 Summer Street, Stamford, CT 06905.
The Seiko Youth Challenge does not have a presence on the Internet.

State by State

Use one of the larger search engines, discussed in *Understanding Our Gifted* 9(2), p.25, to look for academic competitions in your state. For example:

The Oklahoma Association for Academic Competition, Inc.
http://www.onenet.net/~academic/

Michigan Academic Competitions
http://www.umich.edu/~uac/mac/

West Virginia
http://members.tripod.com/~bberry01/index.html

The Colorado Space Grant Consortium
http://www-sgc.colorado.edu/index.html

Surfing the Net

Continued

As you can see, there are lots of opportunities for students who want to compete in an area of interest to test their abilities and refine their skills. One of the advantages is that students frequently meet others who share their interests. But keep in mind that students entering an Internet competition should always be supervised by an adult.

Wave if you see me surfing, and be sure to send a message if you find something on the Internet to interest others. I'll print your suggestion with credit. ❖

sberger@inet.ed.gov

The ideas expressed in this article are the author's, and do not necessarily represent the views of CEC or ERIC Clearinghouse on Disabilities and Gifted Education.

One of the most fascinating sites I have found is The Skeptic's Dictionary and Guide to the News Millennium, maintained by philosophy professor Robert T. Carroll. This site contains a treasure trove of definitions, essays and references, with a comprehensive alphabetical index from A (alchemy) to Z (zombies). What makes it especially engaging are its links to hundreds of delightful sites, from the educational (How Things Work, by University of Virginia physics professor Louis A. Bloomfield) to the sublime (The Summa Theologica of St. Thomas Aquinas), as well as the hilarious (How to Speak New Age), outrageous (The Urban Legends Reference Page), outlandish (The Wide World of Kooks) and just plain bizarre (The Voluntary Human Extinction Movement....their motto: "May we live long and die out."). This site is a wonderful place to spend a rainy Sunday afternoon.

S.B.

Life Lines

Dylan, 6, is very excited to be reading now. While he's jumped many grade levels in his few months as a reader, he's still very aware of word and structure patterns. One recent evening, he was reading away, but stopped suddenly and exclaimed, "Hey, periods are just like stop signs in reading! You come to a period at the end of the sentence and, just like in the car, you have to stop for a second!" He grinned happily and went back to his book.

***

Joelle's 2nd-grade teacher was reading aloud to the class when she came to the word 'omit.' "That's a great word," she said. "Can anyone tell me what it means?" Blank looks from all around, except for Joelle, whose hand went up in a flash.

"That would mean to exclude," said Joelle. Again, blank looks from the rest of the class.

"Wow, another great word," the teacher said, smiling. "Can anyone tell me what 'exclude' means?" More blank looks.

Joelle's hand goes up. "Yes. That means to not be included, of course!"

Neal Brodsky

A Boy, an Island and His Journey

I look forward to an America which will not be afraid of grace and beauty...an America which will reward achievement in the arts as well as reward achievement in business or statecraft. I look forward to an America which will steadily raise the standards of artistic accomplishment and which will steadily enlarge cultural opportunities for all of our citizens. And I look forward to an America which commands respect throughout the world not only for its strength but for its civilization as well.

John F. Kennedy, October 26, 1963

It is 5 a.m. on a quiet island in the Chesapeake Bay. In the hallway of a school on this island, a teenage boy whistles quietly as he mops the tile floor. The boy has agreed to this early morning task to gain access to the school computer and his dream —- a college scholarship from ThinkQuest, the world's largest Internet learning competition. He is separated from his Bethesda, Maryland teammates, Benjamin and Andy, by the rolling waters of the Bay. The limitations of his school's computer will not even allow him to see what his entry looks like until he's invited — with his off-island colleagues -- to the ThinkQuest contest finals at a hotel on the mainland.

Eighteen year-old Nick lives on the tiny island, population 650, with his dad who rises at 3 each morning for his job as a "crab scraper," harvesting the bottom of the bay for his living, and his mom who works as a grocery clerk. Nick attends the single K-12 school which serves as educational home to the island's 144 children. For the past five years, he's been the editor of the school newspaper, "The Fisher," and his dream has been to get a local journalism job after completing his schooling. Until the ThinkQuest contest came along, Nick almost never went off island.

One morning, after hearing an announcement about the ThinkQuest program, Nick was the first to appear in the principal's office to talk about the competition and an idea he had. But there was a problem: he'd need a computer and Internet access, and the only computer on the school premises was much in demand in the midst of a busy summer school session. Nick needed a plan. The school custodian was a distant relative whom he'd helped before, and he knew that no one yet occupied the 5-6 a.m. slot on the computer. To get in he'd have to strike a deal with the man who had the key. Mopping up prior to each online session earned the only available computer time on the island for this young, enterprising Virginian.

It was to be the ThinkQuest contest which eventually served as the bridge linking Nick to the larger mainland community and opportunities waiting for him there. Creating a working relationship with two other teammates from upscale Bethesda was the first thing to happen for Nick. The other boys had an idea to create a website on the history of art that would tour

***Neal Brodsky** is a Creative Director living in Connecticut. His most recent work includes writing on the ThinkQuest program for Advanced Network & Services, and consulting on WorldsAway virtual communities on the Internet for Fujitsu Software Corporation.*

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ThinkQuest

Continued

visitors from 17,000 B.C. and the Lascaux cave murals to the works of Piet Mondrian and Pablo Picasso.

The graphics creation and programming was largely left to the group in Bethesda. Each day, Nick would e-mail his work off the island. Since he was the only one of the team awake at 5 a.m., he had to wait for response. According to Nick, "There was a 24 hour turn-around on e-mail after doing 'my hour' on the computer, because I couldn't get back on until the next day!"

Art Journeys is both entertaining and touching to visit, in addition to its educational value. A "virtual caveman" at the Lascaux site tells us what he might have if he'd spoken English: "I have been driven by the things of importance around me to paint these cave murals...the different animals like the oxen, and the horses, and nature, trees, mountains and rivers.... These things represent life.... I hold these things dear, and painting...aids me in my celebration of the earth and its creatures." A bearded Leonardo Da Vinci superimposed over a Florentine background tells us that he is "deeply interested in the science of art.... I find the study of geometry, engineering, mechanics, unimaginably intriguing. I found that all these sciences tie in with the arts in fundamental ways."

It is certainly clear that the three boys, who were later selected as ThinkQuest finalists for their "Art Journeys" entry, learned a good deal about art and its connections to their broader education. As for Nick, he says: "I learned a lot about the Internet and about working with people." In the contest he had the chance to collaborate not only with his teammates but also to befriend and stay in touch with other students from states including Alaska, Hawaii, Michigan and Wisconsin.

It sounds like Nick's own journey is just beginning. He's packing his bags for the drive to Melfa, Virginia, to attend his new school, Eastern Shore Community College. Nick says he's switching his major to business administration, with the goal of bringing his "Christian values to business" and perhaps to a leadership job in the Methodist Church. From the boy's travels on the Internet and in the non-virtual world, he's been exposed to something "really big" — the words he used to describe the hotel he visited in Washington for the ThinkQuest 1996 Finals. Nick now knows that connections beyond the roots of his island home may lead him to pursuits he might only have dreamed of before. ❖

For information on the ThinkQuest Program, contact: Advanced Network & Services, Inc., 200 Business Park Drive, Armonk, N.Y. 10504
http://www.advanced.org/thinkquest

UNDERSTANDING OUR GIFTED

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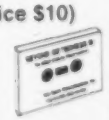
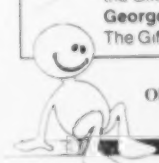
(regular price $8 each)
Volume 9 - 10: $6 each
(regular price $12 each)
Add Shipping/Handling

Audio Tapes
from Beyond Giftedness Conferences
$5 each (regular Price $10)

Tape 1:
Jeffrey Freed
The Gifted Child As Visual Learner



Tape 2:
George Betts
Social & Emotional Needs of the Gifted
George Dorry
The Gifted AD/HD Student



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Creative Ventures

Thinking About Thinking, Creatively: Using Quotations with Gifted Students

Jerry Flack

In quoting others, we cite ourselves.
(Around the Day in Eighty Worlds, Julio Cortazar*)*

Any complete education involves study of the thinking and utterances of others, past and present, but such learning need not be dull. Thinking about the thinking of others can and should be a creative enterprise. The use of quotations, whether in the home or in classrooms, often serves to jump-start students' creative and critical thinking and problem solving.

Quotations can be shared with students in many creative ways. On a daily basis educators can share stimulating thoughts gleaned from the day's news, from current reading or from the treasury of extant quotation books. These can be written on the board or displayed on overhead transparencies as a form of intellectual greeting to students when they enter the classroom. On any given day, quotations, such as this provocative one, greet students as they enter the classroom:

Genius is an African who dreams up snow.
Vladimir Nabokov

Using quotations varies depending on time and circumstance. A teacher might use a quotation while taking roll; as she scans the classroom to note absences, she can direct questions to three or four students, asking them to share the meaning they find in a particular quotation. Another time the teacher may ask all the students to copy the daily quotation into their journals and direct them to spend a few quiet minutes examining the chosen words for meaning and personal relevance. On still other occasions, she may say nothing about the quotation, preferring to allow students to either acknowledge or ignore it. Many gifted students appreciate this latter metacognitive approach.

Thought-provoking quotations may also be placed in the margins of assignment sheets prepared for class distribution. In leftover white space, insertion of stimulating sayings can trigger students' thinking and discussion. The use of quotations can definitely be discipline-related. When beginning an ecology unit, a teacher may wish to share Luther Burbank's trenchant commentary on humanity's fragile relationship with the environment:

Nature's laws affirm instead of prohibit. If you violate her laws you are your own prosecuting attorney, judge, jury, and hangman.

History teachers will certainly want their students to consider George Santayana's classic rationale for the study of history:

Those who cannot remember the past are condemned to repeat it.

Language arts teachers may begin a lesson with Gustave Flaubert's analogy that speaks to the value of reading:

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***Jerry Flack**, President's Teaching Scholar and Professor of Gifted Education at the University of Colorado, Colorado Springs, is the author of From the Land of Enchantment: Creative Teaching with Fairy Tales and Lives of Promise.*

Creative Ventures

Continued

Reading is to the mind what exercise is to the body.

Perhaps music teachers might ask students to debate E. M. Forster's statement from *Howard's End*:

Beethoven's Fifth Symphony is the most sublime noise that has ever penetrated into the ear of man.

Emerging art students may examine the meaning behind sculptor Auguste Rodin's words:

I invent nothing. I rediscover.

Quotations can serve teachers in the introduction of procedures and attitudes as well as content. When students are about to tackle a difficult new skill, for example, it may be wise to share with them Albert Einstein's wisdom:

A person who never made a mistake never tried anything new.

When gifted young people contemplate their life goals and daydreams, an apt catalyst to their thinking may be Mary Oliver's question:

Tell me, what is it you plan to do with your one wild and precious life?

As teachers and parents share the collected wisdom of peoples' thinking about science, music, life and learning, they may also share with students the many ways in which they can use quotations effectively in their communication. This is a fine opportunity for sharing Montaigne's rationale for using other people's well-articulated ideas:

I quote others only the better to express myself.

Point out to students that thank you notes become truly special when graced with a handwritten quotation about friendship, love or family.

Also demonstrate to students how they can enrich their own writings and speeches with the judicious usage of quotations. For example, Beryl Markham set the stage for her beautifully written memoir of life in Kenya, *West with the Night* (North Point Press, 1983) with this line from Shakespeare's *Henry IV* [Act V, Sc. 3]:

I speak of Africa and golden joys.

Quotations do not have to be communicated exclusively in the English language. One positive approach to multicultural education is the use of quotations in their original source language. Celebrate the greatness of Spanish writer Miguel de Cervantes, for example, in both his native language and in English.

El que se estima en mucho se conoce poco.
(He who thinks a lot of himself, knows himself little.)

Every home and classroom should contain at least one substantial book of quotations, and youngsters should be taught early on how to locate and use these reference tools. Quotation books are typically found in library reference collections. Most volumes arrange quotations by topic or subject matter; that is, individual quotations are filed under such headings as "Friendship," "Patriotism" and "Love." The exception to this organization scheme is the granddaddy of all quotation books, *Bartlett's Familiar Quotations*. Its 20,000 entries are arranged chronologically according to each author's date of birth. Sources of quotations begin in ancient Egypt (2650-2600 B.C.E.) and continue to the present day.

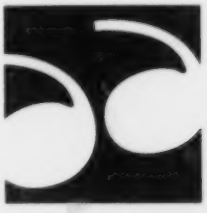
Quotations are truly useful with students of all ages. No one is ever too young to appreciate the wisdom in E. K. Brough's words:

Remember, we all stumble, every one of us.
That's why it's a comfort to go hand in hand.

And, even 5 year olds will recognize this cultural icon's words:

Me want cookie!

Cookie Monster's plea is served up in the 16th edition of *Bartlett's*. The thoughts of Snoopy and the "Peanuts" gang and the wit and wisdom of Jim Davis' "Garfield" have also found their way into many books of quotations. Quotations about pets, colors, shapes, the weather and many other phenomena can be understood by young learners when adequate discussion and exploration time is provided. Children may warm to the notion of sharing favorite stories about their pets when a prompt such as the following is shared:



There are few things in life more heartwarming than to be welcomed by a cat.

Tay Hohoff

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Quotation Projects
Students of every age and interest can make excellent uses of quotations in a wide array of creative products. They can choose from innumerous media and graphics to create large posters displaying their favorite quotations, well illustrated. They can also create books of favorite quotations about such topics as sports, pets, cultures, faith, patriotism and nature.

ABC big books of quotations are possible when students work together cooperatively. Every child or pair is assigned a letter of the alphabet and decides on the object, character trait or phenomenon to celebrate for the alphabet letter assigned. Students seek insightful quotations related to their respective letters. Finally, they letter and illustrate posters. If all groups use uniform paper size, their posters may be collated to form a classroom "ABC Quotations Big Book." The final product can be laminated and donated to the school media center. Students assigned the letters "A," "H," "T" and "Y" may decide to find one or more quotations about Americans, Hope, Television and Youth. The young quote detectives search through several books of quotations and locate pertinent maxims or adages for these topics, using calligraphy, press-on letters, computer graphics and other media to transfer their found aphorisms onto poster-size paper. Finally, to complete the project, the resident class artists can create illustrations for each page.

Students can build their own books of quotations. The quotations may be about many different subjects and can be found in a wide array of sources. Students can make or purchase blank books and write unique quotations at the top of each page. Others may wish to establish computer files for storage of favorite quotations.

A good way to teach students how to paraphrase information is through the audible use of outstanding quotations. Before reading a quotation to the students, instruct them to listen for key words and focus upon the overall meaning of the quotation rather than attempting to copy the quotation literally, word for word. Read the quotation once or twice, and ask students to rewrite the quotation in their own words. Compare students' responses. Do all students derive the same message from a given set of words? Do some people "hear" things that cannot be corroborated by a literal examination of the text? Frequent workouts with this activity help students break the habit of merely copying words from resources. In this instance, they are forced to derive meaning from the words they hear.

Memorization never killed any student, and it has improved many. Although a wholesale return to past practices of requiring students to memorize long passages from Shakespeare, the Bible and other sources may not be called for, the ability to recall and voice (even silently) inspirational thoughts has helped many people survive loneliness, hard times and grief. Students who can recall Eleanor Roosevelt's wisdom at a time when they are being teased or ridiculed by others may find courage as well as solace in her words:

No one can make you feel inferior without your consent.

Students who suffer defeats may find their courage rekindled if they remember Oliver Goldsmith's advice:

Our greatest glory consists, not in never failing,
but in rising every time we fall.

Of course, students can be the originators of sage advice and commentary themselves. A 5th-grade teacher begins every e-mail message he sends with a provocative idea from one of his students:

Evolving is always possible,
and it isn't always voluntary.

Quotations packaged creatively represent gifts of words. Children can package adages in hand-made gift boxes, glass jars, wicker baskets, decorated flower pots and other containers of all shapes, sizes and materials. They can be encouraged to research and find several quotations and devise many different ways to prepare the quotations for giving: tiny scrolls, each tied with ribbons; accordion-folded colored slips of paper; pieces of colored posterboard cut into many different geometric shapes; small stones, written upon and then shellacked; construction paper cut and folded to resemble miniature books.

The actual quotations students choose may be geared to very specific people or for more general audiences. Students can select 20 quotations about mothers by Shakespeare, Emily Dickinson, Langston Hughes and

- continued on next page

Creative Ventures

Continued

others. They should be sure to include at least one of their own original thoughts about the subject. Then they wrap each thought and attractively package all the quotations as a gift of love for their moms. The same can be done for Dad. Or, perhaps Grandpa is a golf nut. No problem. The local library will most likely own a book of quotations about golf with sporting comments made by famous players. Perhaps Aunt Maria will soon graduate from law school; a creative gift for her might be a decorated glass jar filled with bright and agreeable quotations about lawyers, the law and justice.

Gifts of quotations need not be limited to gift giving among students' families. As a class project, students can create quotation books and quotation packages for the residents of a senior citizens' facility. One elementary teacher has her students make old-fashioned Christmas paper chains with red and green construction paper, with each link bearing a Christmas message written upon it by a student. When the paper chains are complete, students deliver them to the seniors. They serve as both festive decorations and as reminders of the true meaning of the Christmas season.

There is really no end of creative ways for sharing quotations. John Trowbridge wrote this tribute to the value of quotations and their potential for impacting our lives:

A thought may touch the edge
of our life with light.

Light up the lives of gifted students by giving them thoughts and ideas worthy of their contemplation. The erudition and goodness found in the quotations of men and women and wise children down through the ages can be grist for the thinking of today's youth. Never forget that one of the cornerstones of education is teaching students to think. Ask, "What is a school?" One answer and one final quotation:

A school is four walls with tomorrow inside.
Amish Proverb ❖

Life Lines

Kai, a 3 1/2-year-old dawdler, was left at the dinner table to finish his meal while his parents put his little brothers to bed. When his mom returned, she found him at the table dipping his fork into his water. Exasperated, she asked just what he was doing.

"I'm lubricating my fork so I can eat faster," he replied.

***

A few weeks ago, Kai, at 5, was playing with his little brothers, having formed a "secret club" with them under the little boys' bunk beds. All was well for about 15 minutes, until the squabbling started and the little ones told him he had to get out.

"Fine," he answered, "I'm seceding from your club!"

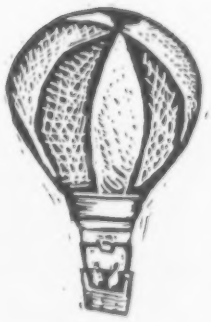
***

A father overheard his 8-year-old on the phone recently, trying to persuade a reluctant friend to go on a bike ride to a nearby stream.

"It'll be really fun!" he heard him say with great enthusiasm. "We'll take provisions and everything. Back by 4:00. Come on!" Pause. Then, he heard him say, sounding dejected, "Food, Peter, it means food."

Above & Beyond

Susan Winebrenner



***Susan Winebrenner**, from Michigan, presents workshops on a variety of topics, but her first love is teaching gifted children. She is the author of Teaching Gifted Kids in the Regular Classroom and Teaching Gifted Kids with Learning Disabilities in the Regular Classroom.*

Planning for Differences

The concept of multiple intelligences, as first created and defined by Howard Gardner, has affected the way the concepts of "gifted" and "intelligence" are perceived by educators. According to the theory, there are multiple ways for persons to demonstrate their intelligence, and teachers are being trained to help all students discover their strongest types of intelligence and utilize those strengths to make learning tasks more successful. The good news is that students for whom the theory works are becoming more successful than they were when success was measured only by how well one did in language- and mathematics-type tasks. In classrooms where the theory is being put into practice, all students find many more choices available regarding ways in which they can learn and demonstrate what they have mastered. This is good.

What is potentially problematic for gifted kids is that this theory may be misapplied to infer that "all kids are gifted" and may provide fuel for belief systems that promote the idea that gifted programs should be expanded to serve all kids in all categories of the multiple intelligences. That belief system ignores the reality that for kids whose "gifts" are in the intellectual domains, the need for accelerated pacing and exposure to advanced concepts never changes. For that matter, kids who are more advanced than their age peers need exposure to accelerated pacing and advanced concepts in their own areas of expertise, whether that is musical, artistic or bodily kinesthetic. Schools dedicated to intramural sports would never dream of expecting their most advanced athletes to work at the same levels as do age peers in the average ranges of athletic ability.

This is not an appeal to elitism. It is an appeal to understand that any student who demonstrates exceptional ability in any area of intelligence deserves and is entitled to appropriate learning opportunities that provide consistent challenge to existing levels of competence. When those opportunities are offered to all students who can demonstrate the need for higher level activities, the practice of offering differentiated tasks is relatively easy to implement.

A practical example may help the reader understand how this goal might be accomplished in a mixed-ability class. When the teacher incorporates planning for diversity as the "regular" lessons and units are planned, there is less apprehension when diversity appears. I have adapted a model from Carol Ann Tomlinson, which I use in all my workshops on training teachers to develop alternative activities. This "plan" is shown here in chart form (Figure 1).

First, the teacher lists the learning objectives which all students should master by the end of the unit. Next, he/she creates an activity for each objective which represents the way in which the teacher is most comfortable teaching. The teacher then assesses the categories of "learning style" or "multiple intelligences" to which the designed activity would appeal. In the next column, the teacher designs another activity which would be highly likely to appeal to other styles or intelligences. It is not necessary to design a separate activity for each type or style; the fact that choices are available is the most important aspect of this plan. Next, the teacher

Above & Beyond

Continued

designs an activity that "extends" the learning objective, while still relating to it. This is for those students who already have a clear understanding of the learning objective and are capable of interacting with that objective at a higher, more complex and abstract level of thinking.

Each time an activity is designed, the teacher checks to make sure that if a student did only that activity, and no others on that line of the chart, the individual would still be learning that particular concept or accomplishing that particular objective.

The chart illustrates two concepts from two different areas of learning. Teachers would confine each chart to just one area, listing and describing several key concepts from that particular unit. Students simply choose the activity with which they feel comfortable.

It is also important to keep in mind that students who already seem exceptionally advanced in a particular unit should have pre-assessment opportunities available to them. Teachers can allow any students who indicate a desire to attempt to demonstrate previous mastery to do so. Students are much more likely to accept staying with the class as it moves through a unit of work if they have been given the chance to show they may be eligible for more advanced work.

One last hint: Teachers working together to plan these learning choices can be quite prolific, given reasonable periods of planning time and if they work together to help one another develop the differentiation charts.

I have worked with hundreds of teachers to help them develop similar plans. They quickly learn that the actual job is less worrisome than their fears might indicate. The alternative is to wait until the day returns when most students in a class are similar in their learning strengths and preferences. However, I sadly fear I will no longer be around to help them celebrate! ❖

References

Gardner, H. (1983). Frames of mind: the theory of multiple intelligences. New York: Basic Books.

Tomlinson, C.A. From a packet of workshop materials.

Winebrenner, S. (1992). Teaching gifted kids in the regular classroom. Minneapolis: Free Spirit.

Curriculum Differentiation Chart

Key Concept or Learning Objective	Teacher's Preferred Activity	Learning Style Alternative	Extension Activity
All biographies have certain elements in common.	*Read 2 biographies of the same person. Write an essay that analyzes how the elements of biography were used in each book.*	*Illustrate the similarities and differences about the elements of biography utilized in each book.*	*Write a biography of someone you admire in which you use all necessary elements.*
There have been many number systems throughout history.	*Learn to write numerals up to 100 from any system.*	*Draw pictures to represent the numerals from 30-70 in any pictorial system.*	*Demonstrate how to do addition & division in another system.*

Figure 1

Aspectus

***Right-Brained Children in a Left-Brained World*. Jeffrey Freed & Laurie Parsons. New York: Simon and Schuster, 1997. 23.00 ISBN 0-684-84271-8. 256 pp.**

As nature gives the right-brained individual a strong visual memory, it also tends to diminish the ability to perform logical linguistic tasks. While the right-brainer has a head start in the world of pictures, he's handicapped in the world of words. Unfortunately for him, our schools are primarily worlds of words. (p. 53)

Right-Brained Children in a Left-Brained World is a much needed second opinion for those who worry that ADD has become the catch-all diagnosis for kids struggling in American classrooms. It further questions the value of medicating children before turning every stone in our homes and schools for answers to the rapid rise in ADD diagnoses over the past decade. Authors Freed and Parsons advance a profound hypothesis for the increase in reported cases of ADD and offer readers concrete tools for understanding and maximizing the potential of many of today's children.

Laurie Parsons' preface recounts the story of her son who was diagnosed with ADD, a moment she recalls as feeling "like hearing Zach had cancer." Her trust in herself as a parent and her efforts to help her son led her to Freed who worked with Zach and helped him maximize his unique gifts and view himself in a more positive light.

Jeffrey Freed, a former teacher and educational therapist/consultant to over a thousand ADD and gifted kids, is known to some as a miracle worker. Those who have seen him in action or heard him speak often discover for the first time that their child is a bundle of strengths and gifts — not just a troublemaker.

In addition to personal accounts, the authors approach ADD from several perspectives. Research on brain function and how our "wiring" is adapting to our speed-addicted world is fascinating and encourages us to examine how modern life with its fast-paced "programming" might contribute to ADD-type behaviors.

Then the authors ask us to look at what ADD really is. Freed presents his theory of hemisphericity as a continuum with schizophrenia farthest out on the left-brained side and autism at the corresponding limit of the right-brained side. He offers readers a series of questions about learning and personality traits to determine where a person falls on this continuum. This inventory of characteristics not only helps readers define where they fall on Freed's continuum but also provides parents and teachers with tools to assess whether they are working with a child who is right-brained, ADD or both. For right-brained individuals some of these characteristics include: perfectionistic tendencies, enhanced spatial skills, acute hearing and poor handwriting, characteristics that often fall under the ADD label.

Through his hands-on counseling, Freed has found that many kids who are labeled gifted and/or ADD tend toward a right-brained learning style while most teachers lean toward the left-brained side of the continuum. The impacts of this dynamic deserve our thoughtful attention, as Freed explains what class is like for the right-brained youngster in a classroom designed and implemented by a left-brained teacher. He helps us see that many traits we have come to view as negative, such as difficulty thinking sequentially, are assets that kids can learn to use to be successful in school and in life.

The authors then offer suggestions for working with "right-brainers" inside and outside the classroom. Methods are straightforward, numerous and easily implemented. "Beyond the Classroom: Tips on Discipline and Organization" is a chapter chock full of effective methods for dealing with the trying side of this learning style. With methods come reminders of what the world looks like from a right-brainer's perspective. Freed and Parsons clearly respect and feel compassion for these kids, reminding us that these are creative, not delinquent, children.

Cartoons, Calvin and Hobbes included, serve to illuminate some of the more difficult aspects of this learning style without buying into the notion that these learners are flawed. The authors help us see that most of these kids are suffering from a serious lack of confidence and that labeling and medicating them without addressing their differences is irresponsible.

In a chapter on the ideal classroom, we see that the strengths of the right-brained learner are so at odds with left-brained methods that kids are bound, literally, to fail. Freed and Parsons offer 12 suggestions to insure that all classrooms are made more equitable for those with this learning style. The authors also recommend that homework be made more meaningful by assigning project-based work rather than the rote drill that is anathema to the right-brained learner.

If there is a child in your life who fits the ADD pattern, let this be the one book you read cover to cover before proceeding with any intervention. ❖ *C.R.*

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Understanding Our Gifted (ISSN 1040-1350) is published quarterly by **Open Space Communications, Inc.**, P.O. Box 18268, Boulder, CO 80308-8268. Subscriptions are $35 for 1 year. Institutions $45. International subscriptions are $47 U.S. funds; International Institutions $57. Back issues available. Third class postage paid at Boulder, CO. For subscription address changes, send mailing label along with new address to *Understanding Our Gifted*, 1900 Folsom, Suite 108, Boulder, CO 80302, eight weeks before moving. Material in *Understanding Our Gifted* can be copied for personal use only. No material can be reproduced for publication without permission. Appropriate credit must be given. Copyright 1999, **Open Space Communications, Inc.** All rights reserved.
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Between the Lines

Asynchrony.....dyssynchrony.....uneven development....whatever the label, the gifted children we teach and parent have "considerable discrepancy between their very high intellectual functioning and their equally common difficulties over more practical matters" (Terrassier, J.C., 1985, Dyssynchrony: Uneven Development. In J. Freeman [Ed.], *The Psychology of Gifted Children*, p. 265. Wiley.).

Amy, age 5, presents a classic example of asynchrony. She was adult-like in her ability to plan the details of family outings, ranging from local errands to more complex vacations. But one day her mother "lost her patience with the excessive whining of her tired child during an extended holiday shopping trip. 'Why don't you act your age?' shouted the exasperated mom. Amy responded tearfully, 'I am'" (Knopper, D., 1997. *Parent Education: Parents as Partners*, p. 25. Open Space Communications.).

Walter E. Gibson empathized with these kids when he titled his book: *Masterful Minds in Mini Cages* (1974, Gryphus.). Today we talk about the 10 year old who designs Web sites by day and sleeps with his well worn "Teddy" at night. We try to understand brains which are years and grades ahead of chronological levels, bodies that may lag behind average age development, emotional and physical levels far behind accelerated thinking processes. Not only are such erratic, yet simultaneous, rates of development extremely frustrating for gifted children, but they result in unrealistic expectations from peers and adults. Sadly, the message to such youngsters is: "If you're so smart, why do you act so dumb?"

A gifted child lives a daily frustration of peaks and valleys, much more intense than the stress of "normal" growing up. Monumental highs occur when these children are challenged academically, free to pursue intense interests and respected for who they are by adults and peers. Rock-bottom lows happen when they are boxed into conformity, realize how different they are from peers (while yearning for acceptance), are required to do school work—over and over—which they mastered years before, laughed at for precocious vocabulary and have elaborate plans in their heads for projects that age-appropriate muscle development and immaturity prevent them from carrying out.

In this issue, our writers have combined anecdotes about real children and the effects of asynchronous development with common-sense analysis of psychological and educational research. Understanding the very real syndrome of asynchronicity in gifted young people will help us, as their mentors and guides, to help them through the difficult challenge of growing up gifted. Maybe, as Sue Winebrenner optimistically suggests, society can view developmental differences as "normal," eventually doing away with the unfairness of the "geeks and nerds syndrome." ❖

D.K.

FOCUS

The Balance Uneasy: Asynchronous Development in Gifted Children

Younghee M. Kim
LeoNora M. Cohen

When Max was just 5 years old, his dad went on a three-week trip to China. He gave Max a large map of China with little flags to pin in the cities on the itinerary, to help his little son deal with his absence. Max became fascinated with maps. His mother got him a large road map of the United States and a U.S.A. puzzle as well. Max spent hours studying his maps and playing with his puzzle. He was fascinated with the nested relationships of cities, capitals, counties and states. His mother felt proud that Max seemed to grasp class inclusion, a classifying task of much older children because he did not confuse city-county-state relationships.

During that three-week period, Max's mother drove from their home in Pennsylvania to visit friends in New York. Crossing the state line, she pointed out the "Welcome to New York" sign to her little boy. Max stared out the window in bewilderment. "But Mom, it *isn't* pink!" he declared. Max was experiencing cognitive asynchrony. He understood the size classification (at least on two-dimensional maps), a task of older children, but his thinking that states were supposed to be the color of the map was typical of a 5 year old.

Gifted children exhibit a variety of characteristics that make them act and react differently to the physical and social environment. We will explain some of these differences which make them asynchronous, both within themselves and with the rest of the world, using Piaget's equilibration theory.

Asynchrony: What does it mean?

In the history of gifted education in the western world, various terms have been used in describing the different developmental aspects of gifted children. Terrassier (1985) described various terms used in the literature including heterochrony (a term used by Zazzo, 1969, and applied to differences between mentally retarded and typically-developing children regarding different speeds of psychological development), dysharmony (referring to pre-psychotic structure and implying severe damage to the child's personality), dischrony (a term coined by Gibello, 1976, concerned with time sequence and mental disturbance and lack of adaptation) or his own term, dyssynchrony. Dyssynchrony includes both "internal and external unevenness in development and their consequences" (Terrassier, 1985, p. 266). Silverman (1993) used the term "asynchrony" to focus on uneven development that "incorporates the emotional dimension, emphasizing the interrelationship of cognitive complexity and emotional intensity" (p. 5). Apparently, varying connotations of these terms affect the understanding of different aspects of development of gifted children. We choose to use Silverman's term "asynchrony" to understand the differences, imbalances, unevenness, inconsistencies or discrepancies among gifted children in adapting both socially and

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internally to a challenging world, particularly emphasizing the cognitive and emotional aspects.

Asynchrony in gifted children can be viewed as having two aspects: internal and external (Terrassier, 1985; Tolan, 1998). Within each of these aspects there may be different variations. For example, among the internal variations, gifted children's intellectual skills are advanced, whereas their emotional, social or physical development may be typical or appropriate for their age, causing unevenness in their development (Silverman, 1997). Another internal variation is that "gifted children's advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm" (Tolan, 1998, p. 172). A third internal variation is that they may perceive and think about the world differently. Finally, relating to both internal and external asynchrony, gifted children may have heightened moral development and become stressed when those around them do not live up to their standards (Cohen & Frydenberg, 1996).

Externally, gifted children may be out of sync with peers, family, siblings, friends and teachers. For example, in understanding and solving problems, these children may notice unusual aspects or solve them very rapidly and accurately which can threaten less able thinkers or appear to be strange. To others, these children may look withdrawn or spaced-out when they are intensely occupied on, say, a challenging mental geometry problem. They may also be extremely sensitive about other people's reactions or comments on their behaviors. These invisible differences can have external impacts on their peers or teachers who may find it difficult to understand such children, thus impairing easy or smooth relationships.

Our analysis of research on Piaget's theory and giftedness indicates that both internal and external asynchrony among intellectually gifted children may be related to differences in construction and organization of their mental and, we believe, emotional structures. This is a process Piaget (1977) described as equilibration. Although contrary to what might be anticipated, intellectually gifted children do not enter a higher stage of development more than a year or two ahead of their typically developing peers, probably because of neurological maturation. However, it appears that there is a different movement within Piaget's stages for intellectually gifted children (Cohen & Kim, in press). Let us briefly describe Piaget's equilibration theory to explain these differences.

Asynchrony and Piaget's Equilibration Theory

Piaget's equilibration theory states that when individuals encounter something new or foreign to their structures for understanding, a disequilibrium is created that requires restoring the balance. We can think of this disequilibrium as a type of asynchrony, as the imbalance throws the child out of sync within a cognitive system. Equilibration involves two aspects: adaptation to novel aspects and events in the environment and internal organization, the mental structures that act on and organize incoming information. The equilibration process involves assimilating a new element by bringing it into the intellectual structure and simultaneously accommodating or modifying the learning structure to deal with the novel aspects. For example, we may be familiar with gifted education but have not studied Piaget's theory. To fully comprehend the relationship between the two requires bringing Piaget's theory into our gifted education structure (assimilation), then changing the gifted education structure to relate Piaget's theory to it, thereby creating a new and enriched understanding (accommodation) (Cohen & Kim, in press).

In typical development, equilibration involves a slow building up of principles or rules from schemes (the simplest level of structural organization), linked into subsystems, then further coordinated into hierarchical, structured totalities marked by differentiation and integration. This last and highest level of organization usually represents stage transitions (Piaget, 1977). To understand how gifted children may experience the imbalance or asynchrony in their learning, a physical analogy might be helpful, one that focuses on teaching the gifted.

Take a small object in the left hand; let's say, a comb. This hand represents the adaptation aspect. Now think of the right hand as being a scheme for teaching gifted children. This is the structure or organization aspect. The objective is to think

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about how the object could be used for learning experiences for gifted children. The object now becomes a conflict, gap or puzzlement, causing a state of disequilibrium or imbalance to the gifted scheme. Hold both hands as fists in front of the body and feel the imbalance. The object has to fit into a scheme that has not dealt with this particular novelty before. The fingers of the right hand reach over towards the object. The object must be assimilated (brought in to the structure) by modifying that structure (the right hand now takes the object, accommodating the shape of the hand to hold it). Now the comb could be used to study concepts of beauty over the ages, adapted for "defuzzing" a sweater or used as a pattern maker in finger painting. An equilibrium has been temporarily restored but new questions arise, such as what other randomly selected objects could be used to teach a lesson? In typically developing children, this imbalance would probably be short-lived and the questions would likely be few. However, among many gifted and creative children, such a simple event could trigger great asynchrony as well as a huge list of questions. Consider the following.

Differences in Equilibration in the Gifted Child

Roberts' (1981) longitudinal study of conservation among gifted and average-developing 5-7-year-old children was the only such study on equilibration and the gifted. Children of average IQ were found to "work forward a domain at a time, consolidating as they go" (Roberts, p. 223), over the areas of conservation. Piaget found that typically developing children conserve the following domains, in order: number, discontinuous quantity (e.g., corn granules), continuous quantity (water), substance (clay), length, weight and volume perspective, over the age period between about 6 or 7 and 11 or 12. Rules or principles are derived from and applied to the specific domain and are not rapidly generalized. This is essentially a vertical movement. Their schemes appear to be more resistant to coordination and integration into total systems.

However, after the initial interactions which are harbingers of stage advancement (typically, conservation of number), intellectually gifted children strike off into new domains, showing growth across domains but not generalizing as much within a domain on the most difficult problems. They have a general principle but cannot consistently apply it. This is more a horizontal movement. For example, unlike his typically developing peers, a very bright 5 year old, Jamal, quickly agrees that when one of the two equivalent balls of clay is flattened into a pancake, there is the same amount of clay in both the ball and the pancake "because they are the same." One ball is rolled into a snake. Again, Jamal applies his rule reasoning and recognizes that the quantity of clay is the same. However, if one ball is made into seven little bears, he says, "There

Gifted children exhibit a variety of characteristics that make them act and react differently to the physical and social environment.

is more clay in the bears 'cause there are so many!" Jamal has lost the conservation because perception has overcome the reason. But he is likely sensing some puzzlement (this is often visible, with a wrinkled brow or an admission of not feeling sure) and may waffle about his answer if asked the next day or week.

At the same time that gifted children deal with the specific contents of number and the various domains of quantity, they begin to develop rules or principles for conservation: the operations of identity (if nothing is added or taken away, it is the same), reciprocity or compensation (water, when poured in a high glass, gets taller but thinner) and reversibility or negation (rolling the clay snake back into a ball). For example, Roberts (1981) cited the case of gifted 6-year-old Anna who told her, "I don't care what stuff you show me. As long as you don't take anything away or add anything, it's going to be the same!" It appears that the intellectually gifted child is a pattern seeker, and begins to try to construct the general principles that apply to all domains, following feedback from the first few encounters.

But even this bright 6 year old gave only an identity explanation,

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not all the other justifications (reciprocity and reversibility), to Roberts. Although the child grasped one of the underlying operations for conservation, her rule construction was incomplete. At the same time, she had constructed a principle to apply across domains, quite different from merely a more rapid coordination from one domain to the next. With her "rule," Anna successfully completed one or more items across seven of the eight domains of conservation. At best, typically-developing 6 year olds would conserve number and perhaps a few items in the domain of discontinuous quantity.

Prior to specific experiences with those areas normally conserved over a four- to six-year period, the gifted child generalizes the broad application of the principle and thus can anticipate the unknown. But this difference in equilibration of gifted children also leads to greater possibilities for disequilibrium. Certainly, the totality is in no way completely constructed, nor all the rules for conservation developed. Gifted children make mental leaps across domains but must fill in the equilibrations to support their principles or rules, or they must change their rules or construct new ones to fit the stimuli assimilated. The partial movement to a deeper level leads to an ability to anticipate — to see a glimpse of possibilities before having fully developed structures to deal with them. Such children are therefore more equilibrated; for example, Max constructing a size-relationship rule for classifying cities, counties and states.

However, this partial accommodation at the level of the total system (in this case conservations across most domains at the simplest levels) makes for greater depths of disequilibrium, as the principles they have constructed may not explain all the data. They grasp the general pattern, but it is unstable. This increases the possibility for more equilibrations and further enrichment of the schemes, subsystems and totalities. Max's hungry interest in maps and his grasp of many map concepts led to more questions and disequilibrium when faced with real-life state lines.

Because the child generalizes, he or she can anticipate possibilities (as did 6-year-old Anna), and there is then greater equilibrium and stability to the world. But because the rule does not always fit or can be overcome with perceptual miscues (so many little bears!), there is also greater disequilibrium. The child is paradoxically both more and less equilibrated. This means the child anticipates possibilities but is more disequilibrated when the rule does not fit — all the gaps and conflict that trigger questions and quests. Even within the cognitive system, this is asynchronous development, an unevenness of development that allows the intellectually gifted child to grasp simple examples well beyond the domains attained in typical development but not the more complex ones, leading to instability of thinking. In summary, intellectually gifted children construct their knowing structures somewhat differently from their more typically developing peers.

Applying Equilibration Theory to Systems Other than the Cognitive

Seeking of balance is a universal biological pattern in which one system influences other systems. These systems — *universal knowledge* (what all children construct without formal instruction, or the Piagetian notions of operations); *non-universal knowledge* (specific domain knowledge constructed through interactions with both adults and a field of endeavor [Feldman, 1997]); *affect; perception* and the *physical, intuitive and spiritual* — interact and evolve. Sometimes they interact and evolve together, sometimes pulling another system along, sometimes with great gaps that cause serious disturbance (Cohen, 1985; Cohen & Frydenberg, 1996). In short, this is internal asynchrony, and in Piagetian terms, disequilibrium among and between systems. We believe that the same equilibration pattern Roberts (1981) found in conservation among intellectually gifted children is likely to occur in other intellectual domains and in other systems, whereby the child is both more and less equilibrated.

Because the cognitive system can influence other systems such as emotional development, the need to find balance when events are painful or frightening requires adapting by modifying the feeling structures or perhaps even using cognitive structures to help. For example, when gifted 3-year-old Ben became aware and fearful of dangers in the world such as earthquakes and mudslides, he worked out his worries by learning as much as he could about volcanoes (Cohen, 1989). Structural change (organization)

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Balance

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is also required to deal with painful events. This same little boy used "sending out alert" stories to help himself deal with his fear. The stories evolved over about a year and a half, from the adult helping the child retrieve a ball in the street to ones in which Ben was a hero in rescuing others from an exploding volcano. Both his cognitive and emotional structures were modified as he learned more about volcanoes and felt a growing sense of control.

Because Ben could work out fears about the world being dangerous through learning everything he could about volcanoes (as well as having very supportive parenting), he was more able to consider options. But because he was so aware of the dangers before he felt big enough to deal with them, his fear was heightened and he was less equilibrated. This paradox helps in understanding perfectionism, sensitivity, intensity and the need for control in the gifted child. The same pattern — both greater balance and greater imbalance — occurs as the child grasps principles, but only partially, rather than coordinating particulars, one at a time, which is characteristic of typically developing children.

- Perfectionism: The 6 year old anticipates in her mind how a cyclamen flower should look when she begins to draw, but it comes out looking to her like a gob of bubble gum. Perceptual, physical and emotional systems are involved. She rips up the paper in many pieces and shouts, "I can't draw!" She is both better equilibrated in the sense of anticipating possibilities, but less equilibrated, in the conflict created when she attempts the drawing.
- Sensitivity: A 9-year-old girl weeps in distress when she sees some boys chasing pigeons in the park. She has constructed a rule about kindness to living things and cannot bear their insensitivity. Her heightened sensitivity resulting from her emotional and cognitive rule construction conflicts with the event in the environment. She cannot comprehend how others can be cruel. Her sense of morality is violated. Internal asynchrony is evident.
- Intensity: A young boy cannot bear to turn off his computer game, even though he has not eaten for hours and is being called to dinner. He has mastered so much of it and is intent on completing it. The disequilibrium of not having the game completed compels him to forget hunger (physical system) and social interaction (system of affect) in his quest to master the game.
- Control: When faced with a new situation in which she feels no control, a 4th grader has to be lifted into the school bus by her mother to go on a class camp-out. Able to anticipate the possibilities of homesickness and fear of getting lost, the child experiences disequilibrium since she has not been on an outing to this campsite. The unknown is a gnawing fear. Yet once she is in the woods and becomes familiar with her surroundings, she takes a leadership role in helping classmates find animal habitats in the creek.

Conclusion

The difference in construction and organization of the knowing structures in mentally gifted children leads to asynchrony even with the cognitive system. Asynchrony can be negative, especially if the imbalances are too great or the contextual supports are absent to help the child deal with the difficulties. But asynchrony can also be a positive dynamism when conceptualized in terms of Piaget's disequilibrium. Only when the child experiences the gaps, conflicts or imbalances (in short, disequilibrium), can she or he grow cognitively or emotionally. And we suggest that asynchrony in one system (say, the emotional or perceptual) can trigger growth in another. It is a balance uneasy. ❖

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FOCUS

Asynchrony Personified

Laura Goodman

Asynchrony. As parents and professionals who live or work with gifted children, what does the word mean to us, personally? We know the book definition, first set down by the Columbus Group (1992), suggests that asynchrony equates to giftedness. They stated:

Giftedness is asynchronous development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm. This asynchrony increases with higher intellectual capacity (p. 14).

This easily makes sense to those who are themselves gifted and/or are raising gifted children with such "qualitative differences." A real, visceral understanding of asynchrony and its repercussions can only help those who work or associate with the gifted.

For many, it helps to have asynchrony named and specified, but often, intuitively, we already know this about ourselves or our children. An 8 year old gives us an example of this self-awareness, as evidenced in a candid comment made while she and her mother looked over the dedication to a novel. It read, "To all children who feel different." "Well," the little girl said, "this book is for me, because I sure feel different." Asynchrony can be understood from the inside-out or outside-in, with or without having heard its formal definition. One woman, the mother of a good friend of a very gifted boy named Thoby, may have unknowingly captured for many the essence of a gifted child's asynchrony. Her son was overheard saying to his friend, "My mother says you're a 40-year-old man in a 9 year old's body." There followed a pause while Thoby pondered, then replied, unplussed, "Yup, sounds about right."

What's your definition? Yours may be personified, have a name and live in your house or may sit in the third row to the left in your classroom. And for the world in general, the best definition may well be one articulated through personal example, one that must be acted out to be understood. Let a group of parents or teachers of gifted children gather and ask them to define or describe asynchrony in their everyday lives, and the ensuing discussion is guaranteed to abound with lively and colorful examples. I asked a number of such groups of parents and teachers to share their anecdotal definitions of the word, and what follows are some of those accounts of real-life gifted children. All names have been changed to protect the privacy of the asynchronous.

As I compiled transcripts from the various groups, I found that most of the anecdotes people told came from children's early years. This isn't surprising, since with younger children, the differences are often more dramatic. The anecdotes also sorted themselves into rough thematic categories: early language acquisition and comprehension, the social and emotional, knowledge and comprehension, tastes and preferences, true child behavior and bathroom issues. Interestingly, that last area is where many of the storytellers started. We will, too.

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Personified

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At age 3 5/6, Chad was reading well and spending much time on the computer. He was absolutely uninterested in potty training. He'd sit at the computer, playing adult adventure games like "Myst" and "Return to Zork" and ten minutes later be sitting on his little potty and drinking a bottle. I was desperate to get him out of diapers, so I offered him a bribe.

I explained to him that diapers were expensive and that each one cost 25 cents. He thought about this while sucking on his bottle, then said, "Well, I use about four a day, so if you pay me a dollar, I'll use the potty today."

I agreed to this. At the end of the day, I paid him his dollar and asked him what he was going to buy with it. He looked up at me, grinning, and said, "Diapers."

Another boy, another day.

*My son Nate was 4 1/2 years old. We'd been through everything we could think of to get him trained — targets in the potty, bribes, special treats, etc. We were at our wits' end. Here was a kid who taught himself to read at 2 years of age but would **not** use the toilet. One night I had just had it with washing wet pants, so I went into his room and found him reading a Chinese novel. As calmly as I could, I told him I was tired of the whole routine and that it had to end. He looked up at me from his book and said, "Oh, okay, Mom." And that was the end of the problem!*

Through the toddler years in one household of three children, two 2 year olds handled their diapering needs in the same way. Both let Mom know when they were ready for a dry diaper, then would go to the bedroom for a cloth one, fold it in thirds, lay it on the diaper cover and then lie down to be changed. "And in line with that 2-year-old behavior," Mom said, "sometimes I had to wait for a bit while that diaper got folded to the child's satisfaction." Another mom told of her son, who'd been experimenting with "big boy pants" for several months, announcing that on his third birthday he'd make the switch and never wear diapers again. That's how it was, she reported, and after the big day there was never a single accident, either.

The language-acquisition and comprehension stories are sure to have heads nodding in recognition or shaking in amazement.

As Kira acquired words, she'd learn them, repeat them clearly and then never say them again. At 13 months, she pointed to the barrette in my hair, asking in her way what it was. I took it out, handed it to her and pronounced "barrette" a few times. She repeated it precisely, then refused to say the word again. This was something she did regularly. At 2 she still refused to talk and the clinic scheduled her for an evaluation, but it was three months before there was an opening. We canceled the appointment about half-way through the waiting period because she suddenly started speaking in complete, coherent sentences.

Thoby's father told of his 9-month-old's method of learning nouns. The baby would say what he saw or was thinking and then repeat it continuously ("incessantly" was Dad's word) until an adult said the word, apparently confirming its pronunciation. According to Dad, Thoby seldom needed to "work" a word a second time. Comprehension abilities in the very, very young are just as astounding.

We had an interesting experience when Jake was seven months old. I was on the telephone and he was crawling around the house. I noticed him playing in my purse but didn't watch to see what he took out. A few minutes later, I picked him up and we headed out to the bank. When we got there, my ATM card was missing and I panicked before remembering the purse incident.

We went home and I started to look everywhere for the card because I thought it was stupid to ask my 7 month old what he did with it. Finally I broke down and asked him if he'd seen Mommy's bank card. He immediately crawled over to a wall vent and said "bank." I looked inside the vent and there was my card. I had to unscrew the vent cover to retrieve my card. Jake watched and then said "money?" with a puzzled look on his face. I laughed for days, and no one believed that story.

Another day, another comprehending baby.

Once, when Sarah was about 7 months, I asked her to go into my room and get something. A friend was over, and I remember how incensed she was that I would think a baby could decipher and follow directions like that. It was funny when Sarah came crawling back into the room a moment later with the thing I'd asked for in her mouth.

Numerous parents and teachers related stories of gifted children's asynchronous social interactions, many of which were told wistfully or tinged with left-over sadness. Jake's mother said that she never believed her child was different until she started having nieces and nephews and spending more time with other children. They discovered that play dates and play groups didn't work for them and they "became total loners. It was sort of a sad time actually," she said. Another parent told of her

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Personified

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daughter, now a teenager, whose early social adaptation was in complete opposition to her advanced abilities. "She never cared to be around other kids and never sought them out until much later in her life."

T. J. had trouble getting along with the neighborhood kids, especially at a younger age. His self-control was not at all advanced, though the games he liked to play were. I remember him getting mad enough to scratch a playmate for not following the rules of a board game and cheating, when both boys were 5. I also remember him getting so annoyed by other kids that he'd misbehave to get a play session stopped. As he got older, he really got a lot more playful and childlike, more able to do the usual things with other children. By 8, he'd really learned how to get goofy with the other kids.

Many quite similar stories were told, describing children who were "on different wave lengths" and "completely out of step" with other children and so found it next to impossible to connect in the standard ways of childhood — games, sharing of toys, pretend play, etc. Too few, it seems, were able to finally find a way to "get goofy" with their age peers.

Sometimes gifted children's tastes and preferences bespeak how out of sync they are either from other, more typical children or from other developmental dimensions of themselves. For instance, one mother told of her 1-year-old daughter's great love for opera. Another described the contents of her 9-year-old son's night stand: Archie comics, Animorph books, a copy of *Hamlet* and a high school physics textbook. Another chimed in with the story of her son who'd hated preschool and reminded her of it a year later, commenting mournfully that "preschool is a horrible thing to do to little children." When she asked him why, he said in a heavy voice, full of disgust, "Think of the coloring." The sophisticated food preferences of young children also came up, detailed by several parents, and suggests yet another, even more esoteric, frontier of asynchrony. There was the little girl who could identify and distinguish from taste between the many different types of salmon; preschool twins who loved tomato aspic, spicy Mexican fare and preferred goat cheese to any other kind of cheese; the 5-year-old boy who requested his sixth birthday party be held at the local sushi bar.

But it is perhaps in areas of knowledge (what they have learned) and comprehension (what they understand) and what they do with it all that asynchrony really becomes conspicuous in these children. These stories were legion.

Last Halloween while trick or treating, 7-year-old Tony and his dad and two younger brothers approached a house with a bubbling cauldron. Dad commented that the cauldron must have dry ice in it, and Tony countered that in order to make a bubbling sound, it must have more than just dry ice since dry ice "sublimates," which, he went on to explain, means that it goes directly from a solid state to a gas. Tony then skipped expectantly to the door to receive his share of candy.

A teacher told the story of a 10-year-old student, already expert in computer programming, who created an original program for ordering merchandise for a local grocery chain owned by his uncle. In the process, he had to contact a major software company and, when he explained what he was doing, was actually offered a job. He responded, "But I'm only in the 5th grade, and I don't think my mom will give me permission!"

The opera-loving 1 year old received her first babydoll and named her "Gobbi" after her then favorite opera singer, Tito Gobbi.

Many of the stories, though, are made of much more serious stuff.

When T.J. was 3, he began thinking a lot about death. He realized that since we, his parents, were much older, we would probably die before him. But as a little boy, he couldn't imagine living independently and was very scared about the idea of someday being separated from us. He was in a state of panic about this for what seemed like months. He lay awake many nights and would call me in with questions about what happens when we die, leading to many more questions about spiritual matters. Never have I wished more than then that I had a simple faith with clear answers to these kinds of questions, ones that could reassure a scared little boy.

My middle son had a very sunny disposition as a toddler, and though he figured out about death, it didn't seem to bother him. One day he was singing a little song and recited the names of each family member, from oldest to youngest. He asked me if I knew what his song was, and when I told him I didn't, he said, "That's the order we're going to die in." Not expecting anything like that, I was chilled.

I remember one night when Sarah called to me because she couldn't sleep. It was raining really hard, and I thought she was probably afraid of that. But it turns out she was worrying about what the homeless people were doing in the rain, and if they were cold. She was 5 at the time, so I figured all 5 year olds thought about stuff like that.

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Personified

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Just like most 7 year olds, Dimitri loves playing his new Nintendo, but the other night after I read him a bedtime story he said to me, "Mom, I have a question I've been wondering about and it has to do with video games and sort of relates to why we exist." Okay, I said, ask away. It went something like this: "When you play video games, you want to get to the next level or get the next item, and then the next, till you beat the game. You have fun, but beyond that what's the point?" He shrugged and went on. "There really isn't any point except to have fun while you play. It sort of makes me think about humans and why we're here....We live our lives and get stuff, but what's the point except to make ourselves happy while we're here, like picking up stuff in the game to get to the next level. Then eventually we die — that's it, the end of the game."

Kenji, who is 6, will discuss atomic bombs, the use of lasers, and military strategy. He contemplates the politics behind past wars. Yet, deep down, he's just a 6 year old who's afraid the bad guys may get him (or Mommy and Daddy). While we don't allow him to watch the news or read the newspaper, he absorbs information by osmosis. We were discussing the recent "military action" against Iraq. Putting it together with other current events in his mind, Kenji asked, "Why can't the people of Iraq just impeach Saddam Hussein, like we did to Clinton?" Of course, I was relieved to shift the focus of our discussions away from bombing, toward a discussion of democracy. But I have to constantly remind myself that he does not have the "mileage" on him to fully grasp the consequences of world events, and to a small child, the big picture can be so scary.

And yet, these deep thinkers are still little children and constantly behave as such. Consider one little girl's dinnertime conversation about exponents followed by her refusal to go upstairs alone because she was afraid of the dark. Then there were the two little girls in an elementary un-graded program for the gifted who struck up a working relationship: the 4 year old agreed to help the 8 year old with pre-algebra if the older one would tie the younger one's shoes. A final snapshot of the opera-lover reflects, according to her mother, how she's very much a 10 year old and *not* a short adult.

Julie's homework assignment was to list 15 idioms or idiomatic expressions. She listed 80 and would have kept going, but she had to get to sleep. The next evening, Julie told us that in class each student had to illustrate the literal and idiomatic meaning of one of their idioms. The one Julie chose? "Cut the cheese." Yes, she is a 10 year old!

Many who don't have first-hand, daily knowledge of the workings of asynchrony might find it surprising to learn how many of these little children, boys and girls alike, now grown into their preteen years and still pondering the sophisticated whys and hows of the universe and human nature, still fall asleep each night with a stuffed bunny tucked under their chins. Whether a 10 year old is exercising her adult intellect to consider causes of world wars, her teenage preference for rap music, her preschooler-level emotions over a disappointment, this gifted child is always being just exactly who and what she is, no more and no less, just like any other child. Sometimes, she's even a dead-on 10 year old. But because of gifted children's inherent asynchrony, theirs is often and in many ways a qualitatively different life from their more typical peers; it's more complex, oftentimes more difficult for them and the people around them.

Let a group of parents or teachers of gifted children gather and ask them to define or describe asynchrony in their everyday lives, and the ensuing discussion is guaranteed to abound with lively and colorful examples.

I hope hearing these "definitions," the many stories told in so many voices, has been both touching and edifying for readers. For those of us who live with asynchrony as a real fact on the most personal of levels, telling and reading the stories can be reassuring, strengthening. For those who might be just beginning to characterize what it means to be gifted, I hope they're helpful in bringing to life, in personifying, a single, crucial word from the gifted lexicon. ❖

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FOCUS

Asynchrony and the Gifted

Jane Piirto

Maria is 4 years old and has been waiting and waiting to go to school. At home, she plays school all the time. She's the teacher, and her dolls are the students. At her day-care center, she's the only one who can read and the one who always leads the other children in games. The teachers there say the other children really look up to Maria, except when she tries to make them do things they really don't want to do, such as count by twos. The people at the center also repeatedly tell Maria's mother that her daughter is very, very bright. She heard the same thing when Maria went for her kindergarten screening, and as a result the district recommended that Maria be tested by their psychologist. On the Stanford-Binet Intelligence Scale: Fourth Edition test, Maria's score was 145, putting her into the 99th percentile. That would qualify her in a few years for the district's program for academically talented students, a program that doesn't start until 4th grade. Along with the enrichment activities offered in 1st, 2nd and 3rd grades, Maria's mother hopes her daughter's profound love of learning and great enthusiasm will carry her in school until the gifted program begins.

The big day finally comes, and Maria is going to begin school. The just-turned 5 year old is ready! She has on her new dress and her new shoes. Her mother braids her hair and fastens it with new barrettes. When Maria gets to school, she's anxious for her mother to leave, yet still she feels shy with so many new faces around her. Some of the children are actually crying. Maria looks around the room and sees a shelf of books, and since she always reads when she doesn't know what else to do, she goes over to the shelf, finds a book and waits for things to calm down. After all the parents have gone and the children have quieted, the teacher sits on a small chair with the students in a semicircle around her and says, "My name is Mrs. Miller, boys and girls. Welcome to kindergarten. In kindergarten, we will learn our letters and our numbers so that we can learn to read in 1st grade."

"I can read already!" Maria says, jumping up.

"That's nice," says Mrs. Miller. "When we want to talk, first we must stand and then wait until Mrs. Miller calls on us."

"But I can read already!" Maria's voice becomes petulant, and tears start in the corners of her eyes.

"That's nice," says Mrs. Miller, "but in school, we'll learn how to read right. Please sit down now."

Maria is chagrined. She feels shame and embarrassment. She does sit down and, in doing so, takes a first step to underachievement. By the time she's been socialized into the kindergarten milieu,

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Asynchrony

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Maria will have learned to keep quiet about her abilities and even to suppress the fact that she can read. In 1st grade, she'll comply with the reading tasks in order to fit in. By 2nd grade, even though all her work will be right, she will have learned that she doesn't have to put forth any effort in school in order to be the best student. By 3rd grade, she will have learned that boredom and laziness are the hallmarks of school work. By 4th grade, when she finally is put into the pull-out program for academically talented students, she will resent it.

In teaching university students, I've used this vignette (Piirto, 1999) to illustrate how asynchrony and intellectual overexcitability, as set down in the work of Dabrowski (1972) and Piechowski (1977), can manifest in a gifted life, even at an early age. First appearing in the 1960s but cited most often in the last few decades in the field of gifted and talented education, Dabrowki's theory on emotional development is particularly suitable for an understanding of giftedness. He believed that people develop through a series of stages brought on by positive maladjustment. His theory, termed Theory of Positive Disintegration (TPD), emphasizes the role of suffering and inner conflict in advancing development.

Dabrowski (1972; Dabrowski and Piechowski, 1977) was interested in describing human personality as it actually expresses itself. He observed a "multileveledness" in human behavioral phenomena, from egocentric to altruistic, from nonreflective to intensely self-aware, from developmental (not capable of psychological growth) to highly developed. The theory emphasizes affective and emotional development, not just cognitive development, and it explains developmental transformation in a sequence of five levels. These levels are useful in considering adult moral and emotional giftedness.

In addition, Dabrowski proposed five types of "overexcitabilities" or intensities, predictive of developmental potential:

(1) psychomotor
(2) sensual
(3) intellectual
(4) imaginational
(5) emotional

In considering human differences and the gifted, someone once said that most people live with the radio on but some others are hooked up to satellite dishes. These are their amplified overexcitabilities.

According to Piechowski (1979), Dabrowski's translator and co-researcher and a counseling psychologist, *emotional overexcitability* might show itself as intense feeling; inhibition; fear; anxiety; depressive moods; memory of emotions; attachments to places, people and animals; empathy; self-judgment; and feelings of inadequacy and inferiority. *Imaginational overexcitability* might manifest itself in inventiveness, vivid visualization, dream recall, use of metaphor, an interest in fairy tales and magical tales, poetry, drama and having imaginary playmates. *Intellectual overexcitability* might express itself as curiosity, thirst for knowledge and analysis, a preoccupation with logic, the ability to intuitively integrate and synthesize seemingly unlike and disparate ideas, as well as the capacity for sustained intellectual effort. *Sensual overexcitability* can present as a love of physical comfort, in tasting, seeing, smelling, touching, hearing, in overeating, sexual indulgence, buying sprees and sartorial pleasures. *Psychomotor overexcitability* might manifest itself in a surplus of physical energy; rapid speech; acting out; compulsive talking; and/or nervous habits such as nailbiting, workaholism and needing always to be moving.

Creative people are often in possession of these overexcitabilities. Environmental factors predisposing people to be creative are:

- encouragement in childhood
- training or modeling of creativity in childhood
- having access to formal training in adolescence or early adulthood
- experiencing stress or loss in childhood

This latter, the experience of stress and loss, leads to a sense of insecurity experienced extremely and intensely. Nixon (1996) said, "Creative persons may seek to compensate for their losses and fulfill their needs by engaging in projects which have as their result an idea, a service or a product that is valued by society" (p. 90).

Dabrowski (Piechowski, 1975) said he witnessed throughout his

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Asynchrony

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life, "geniuses of mankind and saints" who showed psychological disturbances but who "create the highest and the most lasting values." These disturbances came because of "great creative and developmental richness" in trying to reach the highest levels of development. Overexcitabilities are "enhanced and intensified mental activity distinguished by characteristic forms of expression which are above common and average" (p. X).

Dabrowski and Piechowski studied creative producers and found they possessed high overexcitabilities in the emotional, intellectual and imaginational areas. Since Dabrowski's death, Piechowski (1979) has gone on to further research the link between Dabrowski's theory and the gifted and talented. These overexcitabilities seem to be genetic equipment ("original equipment, OE's," as Piechowski often jokes) and they are useful in considering the differences that some children have from other children. Again, much of the Dabrowski theorizing compares children with high IQs with others and, thus, like most of the theories in the field, it is an explication of what it means to have a high IQ.

Silverman (1994), discussing the nature of giftedness, said, "we have lost the entire moral dimension of giftedness" (p. 113). She related the definition of giftedness as asynchrony, and asynchrony as manifested in high IQ as found through IQ testing. "The higher the child's IQ, the greater the asynchrony" (p. 114). She also equated asynchrony with moral understanding: "Asynchrony, intensity, and moral sensitivity are inherent in the experience of giftedness, whether or not a child demonstrates specific talents in a given domain" (p. 114). Morelock first explained asynchrony in the January-February, 1992 issue of *Understanding Our Gifted*.

The Dabrowski theory identifies five levels of emotional development, each mediated by intensities, or overexcitabilities. Dabrowski (1972) wrote of the existence of an intense "inner psychic milieu" in "a sensitive, capable, introverted child," stating that he or she is often pushed to the margins by schooling and by childhood and early adult experiences of rejection, misunderstanding and devaluing by the rest of the world. Such individuals may come to resemble people with mental illness, but they are not mentally ill as they undergo a multi-level transformation from the primitive towards the transcendent. Only a very few reach the highest levels, IV and V, which Piechowski described as being "characterized by deliberate self-directed inner growth guided by the highest ideals." A gifted person's path is hierarchical: through a process of "positive disintegration," that is, a breaking down of lower functions in order to reorganize at a higher level, the individual restructures the psyche. Piechowski said, "if there is no restructuring, there is no development" (1975, p. X).

In Dabrowski theory and among adherents to the New Age spiritual movement that has arisen out of the humanistic psychology movement, one's life is the creative product, and a person labors to become a vibrant, alive and transcendent being as the ultimate in creativity. At 5 years of age, our kindergarten Maria demonstrates asynchrony, as coined by the Columbus Group (Morelock, 1992), or dyssynchrony, as Terassier (1985) called it. Whatever it is called, Maria shows, through her reactions and behavior, a qualitative difference in her personality from those of her kindergarten peers. Depending on many influencing factors, her gifts, OEs and her asynchronous development will most assuredly affect or carry her in any number of directions as she lives, creating her life. Regardless of what she ultimately does and whom she becomes as an adult, whether she achieves personally and/or professionally, whether she ends up happy and fulfilled or the opposite, she will still be gifted and no doubt asynchronous in any number of ways, with those same OEs in play and having variously influenced her path in getting there.

Tolan (1994) noted that whoever gifted adults may be, they are people with unusual minds: "Gifted children do not disappear when they graduate from high school or finish college or graduate degrees. They become gifted adults. If they enter adulthood blind to their unusual mental capabilities, they may go through their lives fragmented, frustrated, unfulfilled and alienated from their innermost beings" (p. 137). Giftedness is within, and not without.

Thus, Dabrowski's work fits into the realms of both humanistic and developmental psychology. An individual grows from level to level through conflict, and one's propensity for growth is termed "developmental potential." These levels are not fixed in time; that

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is, they do not occur at certain ages, but they may occur simultaneously as a person is in a conflict of growth and development.

Piechowski (1977) said, "There are periods of great intensity and disequilibrium (psychoneuroses, depression, creative process), and there are periods of equilibrium...but the more development is advanced...the less possible it is for it to slacken off and cease to carry on the process of intrapsychic transformation" (p. X). The transition occurs and the higher level dominates.

At Level I, *Primary Integration*, the motivation to act is based on main primitive drives. At Level II, *Unilevel Disintegration*, one experiences multiple points of view and conforms to external standards. At this level, if one's actions appear to be nonconforming, such nonconformism is not based on principles the person himself has developed, but rather upon group pressure, for at Level II, he/she follows styles, doctrines and superiors with little evaluation. At Level III, *Unilevel Disintegration*, one is increasingly influenced by inner beliefs as he/she experiences internal conflict between what ought to be and what is. This level is marked by existential despair and much self-reflection. At Level IV, *Organized Mulitlevel Disintegration* one emerges from this conflict, beginnng to behave with a view towards the perfecting of the self and of service to others. This level is similar to Maslow's final stage of self actualization. However, the Dabrowski theory includes one more level, Level V, *Secondary Integration*, beyond Maslow's self-actualization. At Level V, selflessness and a sense of universal unity prevail.

In the Dabrowski theory of development, which is particularly suitable for an understanding of giftedness, the first two levels are characterized primarily by sensual and psychomotor overexcitabilities and the need to fulfill bodily and sensual needs. The higher three levels require emotional, imaginational and intellectual overexcitability. The emotional and intellectual are mediated by the imaginational, which explains why many eminent creative people are able to reach these levels.

Dabrowski and Piechowski (1977) spoke to lifelong development, of life as a process and not a series of stages. Higher forms of development are achieved once a person has moved beyond primitive drives, selfishness, feelings of inferiority toward others, to transcendence, self-determination and continued creativity and clarity of intelligence.

The process of living a life can be viewed as ultimate creativity. The notion that creativity is not momentary but lifelong, that it has a universal purpose and evolves developmentally seem to be the most logical definition of the creative process. For the gifted, continued and lifelong asynchrony describes part of it, with multileveledness as one progresses through adulthood describing another. According to Piechowski (1979), Dabrowski viewed the intensities of the intellectually and artistically gifted as a higher form of adjustment on a continuum of levels of adjustment. "To varying degrees, these five dimensions give talent its power" (Piirto, 1999, p. 366). The potential cumulative power of a gifted life, then, resides not in the development of a single dimension, the cognitive, but within the interworkings of an individual's multiple dimensions and, as such, seems nearly limitless. ❖

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Focus

Giftedness: The Asynchrony Syndrome

Michael Rios

I never use the term "gifted" anymore.

I have long felt that the use of the term has caused many of the problems we experience when trying to get needed resources for our children or have a sympathetic conversation with other parents. Instead, I describe my profoundly gifted son as having "ADS — Asynchronous Development Syndrome" (usually preceded by "severe"). I find people then ask about it, and I start by explaining his least developed areas (such as handwriting, compositional ability or organizational skills), some of which may be below his chronological grade level. I mention how having long ago mastered the rest of the material at the grade level of his weak areas leaves him with endless hours in class without encountering a single new piece of information. I stress that he cannot be in any one grade without complex accommodations. I then talk about the social disadvantages and difficulties, that the kids he can play sports with are never the kids he can do homework with or play strategy games with, so it limits and fragments his interpersonal experiences.

The vast majority of the time, this has the desired effect. As soon as I use the word "syndrome," people put on a sympathetic mindset. As I describe the situation, the difficulties become quite clear before the extent of the giftedness is shown. I find many people, with whom the subject happens to come up at one time or another, regularly initiating conversations about him, asking me with genuinely heartfelt concern about how he's doing.

I was forcibly confronted with these issues when my son was 9. We knew virtually nothing about giftedness at the time, nor had any clue about the extent of his abilities. His attitude and general personality had deteriorated over time, to the point that he had gone into a civil-disobedience mode with the school. He would go to class but refuse to participate in any way, even to the point of sitting on top of a desk, facing away from the teacher, and reading — and heaven help the teacher who tried to interfere! His behavior in or out of school was sullen, hostile, angry, at times even violent; now, he succinctly describes his condition at the time as "insane."

We had tried dozens of different approaches without success and finally took him for psychological testing. He maxed the IQ test, with his academic knowledge and ability ranging from two years behind grade level in writing to that of a college senior in science — a discrepancy of 4.5 standard deviations.

That discrepancy, which is a definition of asynchrony (Silverman, 1994), is precisely what defines an identifiable Learning Disability

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Syndrome

continued

(LD) for federally mandated services. Many parents have unnecessarily avoided this route, perhaps out of fear of stigma or of loss of control of the process. The guidelines for LDs require accommodations in all areas that will help the child have a successful school experience, not just in the identified area of weakness. By having our son identified as LD, we have been able to get the needed accommodations. We cited a Connecticut study (Baum, 1988) which showed that LDs in gifted kids improve the most by ignoring them; this gave us almost complete flexibility in his Individualized Educational Plan (IEP). Generally, an IEP cannot be put into place without the signatures of the parents, so the ultimate control remained in our hands.

When I have suggested this approach, some parents have had a hard time identifying in their own children the handicaps that virtually all these children have. The issue, though, is not about how talented our kids are, but about the difficulties they face daily from their asynchrony: the child who can discern music far better than her fingers can play or who can visualize better than she can draw.

Asynchrony emphasizes the real issue, and usually the greater the giftedness, the greater the asynchrony (Silverman, 1994). We have kids who may need calculus before they're completely dry at night. We have kids who may have the professional skills of an adult but the emotional maturity of an 8 year old. We have kids who can produce and direct an award winning video but cannot write four sentences describing it. We have kids who can handle college level science courses but don't have the organizational ability to get their lab report from their backpack into the teacher's hands.

Perhaps one of the most extreme asynchronous areas for many exceptionally gifted children is organizational ability. Too often, the child is considered lazy, unmotivated, oppositional or worse, when the truth is that the child is incapable of staying organized. Organization requires certain types of neural development, just as do walking and writing; no amount of training or motivation will help until those developments occur. For many asynchronous children, without accommodations, this disability can cripple their attempts to function in an accelerated learning environment. And the effect of having a neurological deficiency treated as a moral or personal failing can have a devastating effect on a child.

If our children were uniformly advanced, they would have far fewer problems; it is precisely the asynchrony that creates their special needs. Often, when an accommodation is needed for a gifted child, the issue is raised that other children should receive the same "benefit." This can result in gifted classes being watered down to accommodate non-gifted children or in the resource being taken away entirely. But kids who aren't asynchronous don't need accommodations to do well in a regular classroom. Our "insane" 9 year old is now a popular 12 year old, with a variety of accommodations and supports which allow him to have a patchwork of courses reflecting his varied abilities. He can handle advanced calculus, does well on tests, but he can't get the homework done consistently; with the IEP to back him up, the teacher has accommodated this, and our son is able to stay challenged but not overwhelmed.

As parents, we're not asking for special privileges for our children; we are asking for what they need to function in an appropriate environment. Without that, there is too often a loss of interest in school, depression, even suicide. The emphasis on asynchrony as a syndrome, even characterized as a pathology, can help others realize that we are only concerned parents helping our children cope with their greatest challenges. ❖

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Carousel

F. Richard Olenchak

Does One Size Ever Fit All? A Case for Individualizing Curricula for Gifted and Talented Students

There is a fairly significant body of literature pertaining to asynchrony—uneven rates of cognitive, emotional, social, and physiological development—among gifted individuals. Gottfried et al. (1994), Morelock (1992), Piirto (1990), Rimm (1995), Silverman (1993, 1995) and numerous other researchers have researched and discussed asynchrony. Focusing almost exclusively on the development of self, most have examined asynchrony from an intrinsic perspective. Even Terrassier's (1985) more comprehensive notion of "dyssynchrony," in which asynchrony was partitioned between internal and external aspects, only cursorily addressed concerns arising when gifted students' needs are out of synchrony with school curricula.

The majority of educators, and certainly the public-at-large, view school curricula as encompassing a set of preordained facets. The quest for acquisition of a list of basic skills for every learner has changed little in the 15 years since Barth (1986) criticized educators for operating via "list logic" in educational and curricular development. Barth felt that schools typically operate using predetermined criteria for improvement and seldom look beyond at the individual students and teachers involved. In the years since Barth's assessment, an examination of four current texts on curriculum and instruction in gifted education revealed that innumerable pages are dedicated toward identification of critical concepts and constructs in each content discipline. In comparison, the same texts barely mention strategies for identifying and serving individual educational needs among gifted students.

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Differentiation According to What and Whom?

Even "differentiation" often has acquired a collective connotation instead of a personalized one. The first structured approach for tailoring education to the needs of gifted students was established by Ward (1961) using a series of principles to develop what he called "differential education for the gifted." Focusing primarily on curriculum, Ward also included some instructional components that required attention to ensure appropriate accommodation to gifted students' needs, though consideration for need was more global than personal. Although several curricular development systems presently recommended in gifted education do, in fact, emphasize curriculum designed to varying degrees around individual students (Feldhusen, H. 1981; Feldhusen, J., 1995; Kaplan, 1986; Renzulli, 1988, 1992; Renzulli, Smith, & Reis, 1982), most modification today appears to be centered on group differentiation

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rather than on individualized differentiation. Although today's curriculum designers in gifted education typically adhere to Passow's (1979) guidelines for differentiating through breadth, depth, tempo and kind, curricular differentiation rarely reaches the individual level. Current efforts seem to focus on ways to organize, structure and expand study of predetermined curricula rather than on personalizing curricula itself.

The Classroom Practices Study (Archambault et al., 1993), conducted by the National Research Center on Gifted and Talented, examined the instructional and curricular practices employed with gifted and talented students in 46 typical 3rd- and 4th-grade classrooms representative of each region throughout the United States. At each locale, two target students, one of gifted/talented ability and one of average ability, were observed intensively for two days. Detailed analyses of efforts to differentiate curricula and instruction were conducted, and results indicated that 84% of the activities across reading, language arts, mathematics, science and social studies in which target gifted students were included contained no form of curricular differentiation.

A poll of gifted education curriculum decision-makers representing 100 school districts in 20 states conducted recently by University of Houston researchers (Olenchak, unpublished manuscript) reinforced this trend. The positive side of the findings revealed that all 100 school districts were, in some way, altering traditional curriculum and instruction for their gifted students in at least some grade levels. Most common elements of differentiation were increased complexity and depth of curricula, coupled with accelerated pacing and an activity orientation in instruction. However, a negative side also emerged in the findings of the survey. Only 3 of the respondents were able to describe any significant curricular and instructional differentiation that took place for gifted and talented students on a personal level. Even in 17 of the school districts polled that use an individualized education program, a process adapted from Federally-mandated Special Education, all but one reported that major curricular portions of those "individualized" programs were actually designed for groups of gifted students. Consequently, it can be reasonably concluded that differentiation is largely based around a philosophy that gifted students are in need of virtually the same curricular components by virtue of the fact they are all gifted. The notion of a personally meaningful curriculum is largely absent.

Though the point of this unscientific poll was not to question the overall quality of curricula in gifted education or to draw premature conclusions about the nature of instruction, there is cause to worry. Even if instruction is personally tailored to gifted students' interests and needs, if the curricula itself is of little interest or satisfies no personal need, gifted pupils are likely to lose out. In practice, then, they would be apt to participate in a host of individually appropriate teaching activities that encompass curriculum about which they care little or nothing. Hence, as curricular differentiation tends to be based on gifted students' needs as a group, even when coupled with truly personalized instruction, gifted students on an individual basis may well be out-of-sync with curricula. Bona fide differentiation of curricula and instruction must account for students' needs on a personal level.

Backing Back into Basics through Testing

While the educational "back to the basics" movement of the 1980s has acquired new nomenclature such as "essential skills," schools in virtually every location in the United States are, for accountability purposes, forced to demonstrate their worth via measurements of basic curricula. Most states, for expediency's sake, use group standardized tests as the yardstick against which the worth of school districts, individual schools and even single teachers is gauged. Although few would argue that producing a literate, reasonably articulate populace in all fields is critical to society's future success, it would be far more difficult to achieve consensus on what comprises the primary, essential or basic components of education. What is it that everyone must learn? By first answering this question, educators concerned with gifted youth can then determine what differentiation of curricula might mean in practice. Basic curricula mostly remains as it was a century ago, though to allow for new information and skills created since 1900, textbooks and instruction are more like a collection of snacks than a comprehensive feast. Studies of textbooks and instruction have revealed an ever-broadening but increasingly shallow curriculum so as to include a taste of virtually everything (Beck & McKeown, 1988;

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Kersch et al., 1987; National Assessment of Educational Progress, 1992). The elements of content and the kinds of skills that garner the most significant attention in curricula and instruction are likely those that are ultimately assessed; in effect, testing has shaped curricula instead of the reverse. To be sure, the important educational tenet of curricular alignment, where tests match with the curricula they measure, could fairly be today termed "assessment alignment," indicative that the measurement tools now often serve to govern what is taught instead of the reverse. One need only study the frequency with which schools have shifted emphases back and forth on some programs over the years to reinforce the notion that schools have an unclear definition of essential education. For instance, arts programs often have been reduced or eliminated during tightened economic times, yet they are suddenly restored when budgets allow. Does this mean the arts are not part of basic education? Then, how about study in government; is that not vital to the development of an educated population in a democracy?

Recently, an edition of The Jim Bohannon Show, a syndicated radio "talk" program, entertained calls from listeners to comment about the impeachment procedures against President Clinton. One caller, a verbally articulate man who described himself as a successful business executive, spoke in terms of his frustration that governmental functions "were in a quagmire because of the laborious procedures impeachment evidently required." Continuing this line of thought, the man criticized Congress for "malaise about everything except the impeachment proceedings—that only the President continued to pass any legislation."

Based on use of language alone, it can be reasonably conjectured that the caller was probably the educated man he self-described, but his lack of knowledge about how legislation evolves in our democracy was indicative of a significant Swiss-cheese-like hole in his educational foundation. Even as the show's host attempted to correct the caller's misunderstanding of our government, the man became defensive. Despite his success in the world of business, he obviously had missed curriculum intended to instruct in the legislative process in the United States, believing that the President passes legislation. While it is surely important to a democracy's survival for its citizenry to have at least functional knowledge of the legislative system, can it be at least tentatively concluded that comprehending the Federal governmental process is not critical to life success? Or, was the caller not especially interested in government during his school years, skipped that part of the curriculum and still managed to achieve in some personally meaningful way beyond the school walls? If the latter, then it makes logical sense that schools can afford to personalize curricula to student interests, rethinking what is meant by "basic education" along the way. Rather than measuring educational success or failure using group assessments designed around fairly dated definitions of "basic," perhaps it is time once again to consider students as individuals. What is basic and important to one pupil may not be so vital to another.

Asynchrony in curricula develops for gifted students when they can find no personally meaningful purpose in the content and processes presented in classrooms even if the instruction is personalized. The great wave of test-driven schools has served all but to eliminate consideration for individual student needs, and this assembly line view of curriculum and instruction has had particularly appalling effects on gifted students.

What is Curricula for "the Gifted?"

Curricular excellence notwithstanding, the likelihood that any one prescribed curriculum can satisfy the needs of all gifted students is inconceivable. Based on curriculum development and instructional research in gifted education, rather than a single test-driven curriculum, there is more likely a set of negotiable and nonnegotiable principles for designing and delivering curricula (Kaplan, 1986; VanTassel-Baska, 1993; Renzulli, 1988). First, however, educators must review current perspectives of required foundational knowledge and skills and arrive at some degree of consensus regarding what it is that all pupils must master—the "nonnegotiables:" what aspects of curriculum are less vital but still preferable for all students to know and the "negotiables:" what skills and knowledge are more domain-specific (those useful to students who truly find themselves invested and interested in a particular field of human endeavor). As radical as this may sound, it is exactly how schools function in a number of highly advanced nations other

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than the United States.

Literacy in the elemental aspects of at least one language (reading and writing) and of mathematics (the four basic calculation processes) is surely nonnegotiable no matter the nation in which one resides. Understanding key concepts about government, economics and scientific thought also is likely critical for all. Yet a parade of facts and skills about which American students are consistently tested may be far less vital. Surely, memorizing capitals of nations and states is not especially important unless one plans to play Trivial Pursuit or become a contestant on Jeopardy. Further, is it essential that all students learn to dissect organisms or to understand chemical elements? While experiences entailing all aspects of curricula across all fields of study are helpful in acquainting young people with the array of content disciplines, schools typically move students into studies at higher levels of sophistication regardless of individual interest and/or need. All too frequently, the underlying reason for doing so has less to do with utility of information and more to do with enhancing students' test scores. But what if the tests for which students are preparing have little relationship with their personal interests and aspirations?

Despite the effort to reform curricula for all students and for gifted students in particular, the fact remains that educators remain fairly unclear about the components of a comprehensive basic education. Even in gifted education, where student interests are usually accorded some degree of respect in curricular design, a certain arrogance continues to prevail. It is believed that by adjusting curricular depth, complexity and pacing, teachers can accommodate appropriately for gifted students (VanTassel-Baska, 1993). Although there is some truth to this view, depth and complexity are expected in virtually all aspects of the academic curriculum for gifted students, and instructional efforts are not necessarily focused on individual gifted pupils' areas of greatest interest.

In an era in which most experts and groups interested in gifted education, including the National Association for Gifted Children, advocate individual development of talent, how do schools have time to nurture personal talent when sophisticated curriculum is advocated for all gifted students in virtually all content fields? Aside from whatever is ultimately deemed to be foundational for all learners, authentic curricula for gifted students must be tailored around individual pupils, their needs, abilities, desires and passions. Otherwise, gifted education is guilty of the one-size-fits-all mentality prevalent in the remainder of education today—it is simply that the "size" is at a level of abstraction and sophistication more advanced than typical. This is a single mindset toward curriculum and represents little effort at identifying and magnifying personal talent. Although such curricular approaches to gifted education are decidedly better than no services whatsoever for able students, they fail to provide for levels of self-development even remotely comparable to those sought in special programs for students with disabilities. While developing talent among each individual gifted student may not require the same type of educational perseverance that enhancing education for pupils with disabilities entails, there is no doubt that personal development can only come about if education is, in fact, personalized. Global curricular structuring for gifted students, as if they were all of the same fabric and in need of the same tailoring, is as ludicrous as it would be for special education to treat all students with any manner of disabling conditions in the same way.

A Proposal and A Challenge

Though differentiated curriculum is far better than miring gifted students in traditional, undifferentiated curriculum, to be excellent, curricula for gifted students must be personalized. Individualization, long viewed as requiring more work and more time for both implementation and assessment, is the law of the land in special education, and rightly so. Students who present extraordinary educational needs require exceptional educational provisions in instruction as well as curriculum, but to differentiate for the gifted as though they comprise some nameless, faceless, impersonal, collective identity is patently wrong. Differentiating curricula for gifted students in this unidimensional fashion represents a beginning but not a finality.

Renzulli (1988) proposed a "Multiple Menu Model" for differentiating curriculum for gifted students. In it, students' personal interests occupy a cornerstone, and teachers are encouraged to insert their own "artistic modifications," or personal interpretations and

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meanings, pertaining to curricula. To address individualized curricular differentiation, educators might turn to the Multiple Menu approach as one way to include the personal aspects of each gifted student in curricular frameworks. Imagine how a gifted student who is even remotely interested in archaeology might respond when she learns that her social studies program includes an exploratory of the mechanisms through which practicing archaeologists draw conclusions. Imagine how that same student might respond to an otherwise mundane assignment about Colonial America when her teacher emphasizes the on-going archaeological investigations in Williamsburg, Virginia.

Gifted students deserve the richness and profundity of sophisticated curricula that is gauged individually and not collectively. It is of essence that curriculum designers in gifted education not marginalize the individual needs of each student but, modeling after our brethren in special education, promote each individual gifted student's development. The Multiple Menu Model presents one option for curricular attention to this task.

Regardless of the approach, it is imperative that educators and curriculum experts in gifted education work hand-in-hand. Addressing each student at an individual level is of essence in gifted programs; to treat gifted students as an homogenous group is not only inaccurate, it is insulting. More than any other goal, gifted programs must aspire to the development of each individual gifted self. To treat gifted students in any way other than the most personal through individualized curricula is tantamount to "group think"—that all gifted individuals must, by definition, be the same.

The challenge for gifted education is to develop a truly individualized stance toward curricula, and along the way, to determine what is basic for all gifted pupils and what is basic for each individual gifted student. To do otherwise represents little regard for each gifted student and presents a total disregard for individuality. The asynchrony many gifted pupils experience between themselves and school curricula does everything to inhibit personalized talent development and may, in fact, serve to obstruct it altogether. There is no magical gifted and talented program curricula suitable for application to all gifted and talented students. Only through personalizing curricula as well as instruction will gifted and talented students be served well educationally. ❖

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G/T Programs Database

The ERIC Clearinghouse on Disabilities and Gifted Education is developing a searchable database of promising or exemplary gifted programs currently in operation around the United States. The database will reside on our Web site <*ericec.org*> and will be accessible by the public at no cost. We are currently seeking nominations for inclusion in the database. If you know of a school-based program (not a summer activity) anywhere in the United States that meets the intellectual and academic needs of gifted and talented children, please send contact information: name, address, phone number, e-mail address and Web site if available. We would appreciate a short statement on what you like about the program, but this is not essential. We can be reached at 800-328-0272 or *ericec@cec.sped.org*. Anyone—teachers, parents, administrators, students—may nominate a program for consideration.

Sandra Berger

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INTERACT!

....a forum for discussion of what is important in the lives of gifted children and those who live and work with them. Share your views and opinions, your successes and frustrations, your expertise and your dreams.

I read each issue of *Understanding Our Gifted* with great interest. Not only do the articles in your journal help me with the gifted in my class, they help me remember that all children have unique qualities that must be valued. They strengthen my belief that I am a teacher of ALL children—and particularly EACH child. Every year my 3rd grade classroom consists of children of many varying disabilities and abilities. It's my job and my challenge to help them all.

As a teacher, I must figure out each child's needs and work with them, no matter what they are—learning disabled, handicapped, gifted etc. Your journal helps my understanding of every child.

Elaina Mills
Michigan

Notes From Home

Allegra Sanchez

When In Doubt

Doubts. Large or small, to one degree or another we all have them. I had doubts about homeschooling, which is why it took us so long to start, and some of the worst ones erupted during the early days of educating our children at home. If it hadn't been for friends who already had a lot of experience to their credit, I don t know how we would have made it through those rough times. Our homeschooling is so much a part of our lives now that I'd almost forgotten the fear and trepidation of the first months, but it all came back to me when I got a call from my friend Beth.

Beth's husband Roger recently decided that it would be in the best interests of their two extremely gifted boys to be homeschooled. Eric, the younger child at age 5, was so bored in kindergarten that he was becoming a "nuisance" according to notes from his teacher and the school guidance counselor. Among other things, Eric was simply refusing to cooperate with the teacher. Donald, 8 and in 2nd grade, was becoming impassive, withdrawn and, it seemed to his parents, depressed. All Beth's and Roger's efforts in trying to deal with the school, to convince the teachers and the administrators that a different approach needed to be taken with their children, were to no avail. The school's official position that "all children are gifted" did nothing to help these youngsters, and professional testing evidence of exceptional intelligence together with the psychologist's recommendations did nothing to sway the thinking of people at the school. Despite plans to reclaim her premarital life as a sculptor and some reluctance to give them up, it was clear to Beth that her sons' emotional and intellectual development was at stake. She agreed to leave the welding equipment in storage a while longer and instead take up the tools of a homeschooling mom.

Beth is an extremely competent, confident and capable woman. In addition to being highly regarded in her field, she has a BFA from Syracuse University as well as a teaching certificate. Anyone would agree that an individual with such credentials would definitely be qualified to teach her own children. A few weeks into their new lifestyle, however, Roger came home to find the boys in their rooms for a time-out and a very upset Beth. She didn't think this homeschooling thing would ever work, she told him. The boys weren't cooperating, at all. Donald, while no longer withdrawn, was rapidly approaching the opposite end of the spectrum and becoming aggressive, while Eric, who wouldn't cooperate with his teachers, wasn't cooperating with her either. Add to all of that the fact that she still had to be Mom and do the cooking and cleaning and nose-wiping all day long, and it was just too much. Her doubts about the endeavor were huge and, it seemed to her, insurmountable. However difficult things had been with them in school, she thought maybe the boys would be better off back there after all.

Roger listened to her concerns and complaints but was determined

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***Allegra Sanchez** is a writer, volunteer worker and homeschooling parent of two gifted children. She and her family live in Texas.*

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that the boys not go back into a school environment. He suggested she contact someone who'd had lots of experience with homeschooling, someone who'd been through the rough beginnings of going from school to home for learning, someone who could offer support and guidance. In short, someone like me.

I got the call from Beth the next day. I wasn't prepared for her litany of doubts and concerns, but after I'd been listening awhile they all began to sound familiar. Walking through them with her, I remembered having had most of the same troubling thoughts when our own homeschool experience began. It would have been easier to brush her concerns away with a comforting but condescending "There, there, this too shall pass," but I knew she needed more than that. I phoned some people, all experienced homeschool parents (one with children grown and gone from home), and invited them over as an impromptu support group for Beth, certain their words of encouragement and commiseration would be helpful.

Later that same afternoon, while children of varying ages and abilities played and talked outside, the adults gathered in my family room. Beth, who was glad to have her boys meet some new friends and run off some energy, was even more pleased to be in the company of adults who understood her situation. She already seemed more relaxed than she'd sounded earlier on the phone. I was about to point this out to her when she turned to me and said that perhaps this was something she needed all along, contact with like-minded adults. It's difficult to be around children all day, every day, even when they're yours and you love them dearly. Adults need other adults.

One by one the other members of our group shared their experiences with Beth. Elliot, the one dad of the bunch, told her how difficult it had been for him in the beginning until he learned to be less rigid. His three children all had very different temperaments, interests and energy levels. What worked for one didn't work for another. The first and second children could work well together, but the first and third clashed horribly. The very structured learning plan Elliot initially devised had to be restructured again and again until he discovered that it really was easier for him to let each child pick his or her own subject matter, leaving him to supervise and provide assistance where and when it was needed. He added that he still viewed their homeschooling experience as a work in progress, a process rather than a finished product.

Then Lindsey spoke up. Taking time for herself was an important issue, but she didn t realize it until she had a day like the one Beth had had. She told of that day, when everything came crashing down around her and she, too, had felt she just wouldn t be able to handle homeschooling. Her daughter, Alison, is very intense and active. Lindsey spent so much energy being involved in Alison's days that she'd overlooked her own needs. A long talk with her husband resulted in what amounted to a minor rearrangement of domestic tasks, but it was all she needed to regain her equilibrium. They worked out that after weeknight dinners, John and Alison would do the dishes, clean the kitchen and spend daddy/daughter time together while Lindsey did whatever she pleased. Sometimes that meant a long bubble bath, reading, a leisurely walk or an evening at the movies by herself or with a friend. And once every other week Lindsey and John hired a sitter and spent time enjoying each other's company. This arrangement became habit and worked well for several years; it also had the side benefit of fostering a very strong bond between Alison and John. These days, Alison does the dishes and cleans the kitchen by herself, but after that, she and John sit down to play chess or discuss Alison's latest project. Lindsey still has the quiet time if she wants it, but more often than not she joins in their discussion. And she and John still have their weekend dates.

One by one the stories continued. Ramona mentioned how difficult the process of deschooling had been. (For a more thorough discussion of deschooling, see the Spring, 1997 issue of *Understanding Our Gifted*.) Ramona's philosophy leaned toward unschooling, but during the first few months she became doubtful about its efficacy. However, once they came through that uncertain deschooling period everything settled down and got better each year. She added that it helped her to have the assistance of other experienced unschooling parents.

Another parent said that her tactile/kinesthetic children needed lots of field trips to museums, farms, fields and so forth. Staying inside trying to learn exclusively from books made the kids edgy and uncooperative. Obviously, organized, sit-down work was not for her children, but it took a while to figure out what, exactly, *would* work. She told of the day, a particularly bad one, when a visiting friend suggested they get out, go to the zoo. The effect was nearly miraculous and altered both her perceptions and

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approach. Not only had the children been well behaved that day, they were actually excited about learning new things about the different animals and even continued their investigations once they got home. After that it was simply a matter of identifying appropriate places to go and keeping the car gassed up.

Bonita wondered at times whether her child was actually learning anything. The early days for her were full of doubt, but she learned to trust in her son's innate curiosity and desire for knowledge. Any lingering doubts were allayed recently when her son took the SAT and scored very well. The mom whose children were now in college confirmed that feeling of satisfaction and reassurance. She said that in the end everything worked out beautifully, in spite of all her worrying. They just had to work through their own problems and their own chaos until they came out the other side happy, healthy and well prepared to move on in the world.

There were other comments and suggestions, and I watched Beth take them all in. Computer programs and the Internet were helpful for some people but not for others. A few children craved workbooks, and others couldn t stand the sight of anything remotely schoolish. One thing that everyone agreed upon was that a support group of some sort was extremely helpful, especially in the beginning of the homeschooling journey. One mom of younger children invited Beth to join her on-going group, saying it would give her the regular opportunity to meet with other adults, compare notes, get ideas, share resources and recharge her energy levels. It would also provide an automatic play group for her children. Beth gratefully accepted the offer.

When we were all finished and the people gone home, Beth listed what had been made abundantly clear to her: (1) doubts, sometimes strong ones and especially in the beginning, are normal; (2) a support group of some sort can be very beneficial to parents and children alike; (3) it's important to have faith in your children and yourself and to believe in their innate desire for knowledge; (4) and while no one can see the future, everyone had agreed that the end result was well worth the beginning anxiety.

That gathering happened several months ago. Beth tells me she still has days when her doubts seem palpable but that she's developing ways of coping so they don't get out of hand. The boys are settling down, too, and are starting to rediscover themselves. I didn't say, but I'm sure she knows, that there are bound to be more rocky spots along the way. But it will all work out for the best for them; I've no doubt about it. ❖

Did You Know?

Most of us use the term "listserv" in conjunction with an Internet mailing list such as TAG-L or TAGFAM. Recently I discovered that its use might violate a copyright. It turns out that LISTSERV automated mailing list management software is a registered trademark of L-Soft International, Inc. Landover, MD (*http://www.lsoft.com*). Although LISTSERV refers to a specific mailing list server, the term is sometimes used incorrectly to refer to any mailing list server. Using the term generically can be a copyright infringement.

Another popular mailing list server is a freeware package called Majordomo. [Source: TechEncyclopedia (*http://www.techweb.com/encyclopedia/*) and PCWebopaedia (*http://webpedia.internet.com*)]

Sandra Berger

Surfing the Net

Gifted Legislation and Homeschooling

Sandra Berger

Supporting Legislation

A grassroots effort to bring parents together to support the Gifted and Talented Students Education Act of 1999, a federal funding legislation proposal, and to improve public awareness about the nature and needs of gifted learners, has been taking shape for several months. The official name of the group is the National Network of Families with Gifted Children (NNFGC). The group is led by Susan Christensen *susanc@phonet.com*, legislative contact, and Terry Stetson Wilson *pals222@aol.com*, Director of PALS, the Florida advocacy group. Susan, an NNFGC board member with significant Congressional expertise, is speaking for the organization to members of Congress and other elected officials about the Federal Funding bill. Terry has experience in keeping advocacy groups growing, focused and moving in the right direction. She and Mary Eileen Wood, editor of the New York AGATE's newsletter *mewood@ibm.net*, are the networking contacts. A new e-mail list provides updates on the Federal Funding Legislation for gifted. To subscribe to this free service, sponsored by the NNFGC, send a message to *majordomo@scri.fsu.edu*. In the body of the message type in lower case letters: *subscribe nnfgc*. This is an "announcement only" e-mail list, not a discussion list. In the future, you are likely to find tips on advocating for gifted at local, district and state levels, and occasional suggestions for actions you might want to take to support the funding legislation.

When you visit the Web site *http://www.NNFGC.org* look for the Federal Legislation link and the list of co-sponsors of the proposed legislation. You will also find a complete explanation of the proposal. To read the text of the legislation, use Thomas, the Library of Congress locator *http://thomas.loc.gov/*. Type the bill numbers or the word "gifted" in the appropriate box on your screen. Bill numbers are:

1. Gifted and Talented Students Education Act of 1999 (Introduced in the Senate) [S.505.IS]
2. Gifted and Talented Students Education Act of 1999 (Introduced in the House) [H.R.637.IH].

Thus far, the group is networking with people from 33 states, people like you and me, and is working with national organizations such as the National Association for Gifted Children (NAGC) and Council for Exceptional Children (CEC)-TAG. You do not have to have a lot of experience in advocacy to join this group—just commitment to gifted education. There are no dues and no meetings in the traditional sense. Communication is by e-mail. Choose your own level of participation, and expect to enjoy the partnership and support of other gifted education advocates. The NNFGC needs representation from every state, so don't wait. Join now by subscribing to the mailing list. Then send a message to Terry or Mary Eileen and let them know that you're out there and ready to support the group's mission. Support our children's future.

***Sandra Berger** is the Information Specialist for Gifted Education at the ERIC Clearinghouse on Disabilities and Gifted Education in Reston, Virginia. She is the author of College Planning for Gifted Students.*

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Surfing the Net

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Homeschool Study

Students schooled at home score higher on standardized tests than their public and private school peers in every subject and at every grade level, according to a report released in March, 1999, that is being billed as the largest study of its kind. Underwritten by a $35,000 grant from the Purcellville, Virginia-based Home School Legal Defense Association, the study is based on 20,760 homeschooled students from 50 states. The study's author is Lawrence M. Rudner, a researcher who also serves as the director of the federally funded Educational Resources Information Center (ERIC) Clearinghouse on Assessment and Evaluation at the University of Maryland College Park.

The goal of the homeschooling study was, in part, to independently verify findings from earlier studies conducted by homeschool advocates. Although homeschoolers performed well above the median on standardized tests, verifying the earlier studies, the study does not prove nor was it intended to prove that homeschooling is better than traditional education. However, it can be said that for those who choose homeschooling, it is working.

Families who pay to use the nation's largest homeschool testing service through Bob Jones University in Greenville, South Carolina comprised the study sample. About half the families returned a voluntary questionnaire. Depending on grade level, students either took the Iowa Tests of Basic Skills or the Tests of Achievement and Proficiency. Unlike earlier studies, the parents did not know their children's test scores before agreeing to take part in this one, and all students took the same nationally normed tests--those that rank students against one another. Homeschoolers' median scores across grade level and subject area typically fell in the 70th to 80th percentile. Almost 25% of the homeschoolers were studying at one or more grades above normal for their age. The study found significant achievement differences among homeschoolers, depending on factors such as family income, parent education, and amount of money spent on home education. The vast majority of homeschooled students under study, 94%, are white. They tend to come from two-parent families, and they watch significantly less television than children nationwide. Nearly 88% of homeschoolers' parents continued their education after high school, compared with 50% for the nation as a whole; the median income for homeschool families was $52,000 versus $36,000 for all United States families with children.

Other findings were: Students homeschooled their entire academic careers tested higher than students who first attended other school programs; nearly 20% of mothers who homeschool are certified teachers; and there was no significant difference in test scores between children taught by parents without a teaching certificate and those whose parents did hold a certificate.

After the findings were released, I asked Dr. Rudner if the study indicated that accelerated students were gifted, or might have been labeled gifted by public school programs. He responded by saying that the study demonstrates that students working above grade level are achieving at or above the 80th percentile. I also explored the possibility that homeschooling families have more children than the national norm, which might explain a higher income. The answer to that question as well as others will have to wait until the data is examined in that context.

The United States Department of Education estimates that more than 1 million students nationwide are homeschooled. These numbers represent a substantive increase over the estimates just 10 years ago. The findings of the study are important, not only because the study represents a sizable population, but also because the number of homeschoolers increases every day. Does the increase represent children whose needs have not been met by the public school system?

Homeschooling today is very different from 10 years ago, in part because of available resources. Anecdotal evidence indicates that most homeschooling families have a connection to the Internet and use it regularly to find information, communicate with other homeschooling families and to create products. For example, the Web site Brightwood *http://www.brightword.com/links.html* includes links to other sites that have been designed and are run by young teens. Student-designed Web pages are found everywhere; the Internet provides a place where children can publish their products and get rapid feedback from students in other countries. In addition, the Internet makes it possible for students to take Advanced Placement courses at a younger age than their school-based peers.

Although the study did not address socialization, Christian Smith and David Sikkink, sociologists at the University of NorthCarolina, point to United States Department of Education data that show homeschooled students are more likely than their public school peers to take part in civic activities, such as volunteering for political causes or joining community organizations.

The homeschool study was disseminated by at least 12 major

- continued on next page

Surfing the Net

continued

newspapers online, and C-span carried an hour-long interview with Dr. Rudner. Coverage alone does not equal a trend, but hopefully some of the myths and concerns that surround homeschooling are being addressed in public forums.

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Sponsored by the Home School Legal Defense Association and published as Education Policy Analysis Archives, v.7, n.8. (See next citation for popular version of this work.)

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http://www.hslda.org/nationalcenter/statsandreports/rudner1999/
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* Education Week *http://www.edweek.org*

* Smith, C. & Sikkink, D., 1999. Is Private Schooling Privatizing? First Things, Number 92 (April), pp.16-20.

Advocacy Associations

Home School Legal Defense Association (HSLDA)
http://www.hslda.org/
HSLDA has established a reputation as an articulate and effective national lobbying and advocacy organization to Congress and to the media. The site offers legislative alerts, law summaries for each of the United States and a conference calendar, plus more.

National Home Education Research Institute (NHERI)
//www.nheri.org/
NHERI's mission is to educate the general public about homeschooling, as evidenced by its online factsheets and lecture schedules.

Testing Services for Home Schooling Families (Directory)
http://ericae.net/testdir_hs.htm
This directory, compiled by the ERIC Clearinghouse on Assessment & Evaluation, provides sources of standardized tests for homeschooling parents. Although, typically, standardized test publishers require certification for test administration, these sources have arranged for variable agreements with the publishers to relax the certification requirements for this special population.

Eric Digests [Topical Overviews]

Aiex, J.K., 1994. *Home Schooling and Socialization of Children.* *http://www.ed.gov/databases/ERIC_Digests/ed372460.html*

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Rudner, L.M. & Farris, M.P., 1992. *A Precedent for Test Validation.* *http://www.ed.gov/databases/ERIC_Digests/ed355250.html*

Miscellaneous Resources For Homeschooling

What is Homeschooling? *http://www.accesseric.org/resources/parent/homesch.html*

Homeschooling Resources for Parents and Students
http://www.accesseric.org/resources/parent/homesc2.html

A Homeschooling Mini-bibliography (EB 18) that lists all the standards organization as well as other hard-to-find resources. *http://ericec.org* Select GIFTED, then MINIBIBS

Two topical overviews offered by Access ERIC, from its set of Parent Brochures
http://www.accesseric.org:81/resources/parent/parent.html

Sites for Homeschooling Families - by the Children and Technology Committee of the Association for Library Service to Children, American Library Association
http://www.ala.org/parentspage/greatsites/parent.html#b

Homeschooling - a long list of resources from the Northwest Regional Educational Laboratory (NWREL)
http://www.nwrel.org/sky/Office/Main/Involving_Family/Home_Schooling.html

sberger@inet.ed.gov

The ideas expressed in this article are the author's and do not necessarily represent the views of the CEC or ERIC Clearinghouse on Disabilities and Gifted Education.

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The Bookshelf

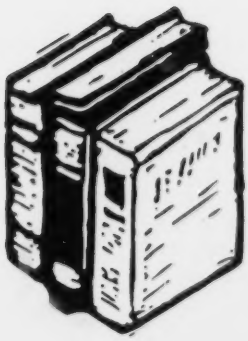
Suzy Schettler

Those Devilish Numbers

We have a math fanatic living in our house. Our younger son has always been fascinated with numbers and patterns — he even thinks fractions and averages are *fun*! He's not alone in his passion, however; many gifted children seem to connect with and be excited by mathematical exploration. From an early age they seem to instinctively play with numbers and patterns, excited by their discoveries. Unfortunately, this early excitement can get buried and virtually crushed under years of number drill and an endless repetition of worksheets covering concepts long since mastered. Even in children who have exceptional natural mathematical ability, the result is too often a math aversion.

One mother told me her son had come to believe he was terrible at math, despite the fact that ability testing had shown just the opposite. Unfortunately, his strong natural ability and interest had shut down under the repetitive assignments of concepts long since mastered. What resulted were careless errors on tests and assignments — errors that contributed to his feelings that he was no good at math and to his plummeting self esteem. This along with his aversion to rote memorization for things like multiplication tables became a recipe for math disaster.

The Number Devil: A Mathematical Adventure by Hans Magnus Enzensberger (1997. Markham, Ontario, Canada: Fitzhenry & Whiteside) is a book that deals with just this scenario. Yet, because it's presented in such a delightful way, it's a fun read for the math aversive and math fanatical alike, and for everyone in between. 12-year-old Robert has decided that he despises math and anything to do with numbers. He's had his fill of his math teacher Mr. Bockel, and his constant, seemingly pointless assignments. But one night Robert is visited in his dreams by an elderly man the size of a grasshopper, who bobs up and down on a spinach leaf. The little man is, of course, the Number Devil, come to show Robert that mathematics is more, much more, than counting pretzels and endless worksheets.



Many readers will find much to relate to in Robert's feelings about math and math class. They will likely be shocked (and secretly delighted) to read the Number Devil's response to Robert's complaining about his class assignments: "That kind of problem has nothing whatever to do with what I'm interested in." When he goes further to reveal that many genuine mathematicians are bad at sums, eyes will open wider, smiles are likely to erupt and readers will be hooked! How can one not want to know where such an unusual book with such extraordinary statements will lead next?

The chance to explore big concepts and new ideas is something most gifted children thrive upon. They bite off huge chunks of new information, chew it thoughtfully, develop theories and connections and let it simmer in their minds. Math is no different if

- continued on next page

***Suzy Schettler**, from Ontario, Canada, is the homeschooling mom of two gifted sons.*

they're allowed to explore and ponder, but too often it becomes little more than learning to follow rules and repeat simple algorithms. The Number Devil reveals a world of math full of tricks and fascinating coincidences which, at times, seem almost magical. It offers readers a chance to investigate new ideas and see things in a different way. This isn't worksheet-and-word-problem math, but math that's alive, with which the Number Devil encourages thinking and questioning and experimentation. It's an invitation most gifted children would find hard to resist.

In nightly dream visits, the Number Devil introduces Robert to things like prime numbers, square roots and irrational numbers. Of course, the Number Devil doesn't call them by those names; in Number Devil Land, prime numbers are known as prima donnas, irrational numbers he calls unreasonable, and finding the square root is called taking the rutabaga. On nights Robert dreams of a visit by the Number Devil, he finds himself transported to whimsical locales such as a forest of ones or a desert with coconut trees where the Number Devil uses coconuts to show Robert the concept of triangle numbers. All kinds of interesting tools aid Robert's understanding. While sitting on a giant mushroom, Robert skywrites his math answers in purple cloud script using the Number Devil's magical walking stick, and another time Robert uses a pocket calculator as large as a couch. In fact, the nightly visits are so interesting and unusual, that my resident math fanatic told me he hoped when he fell asleep at night that the Number Devil would come to visit him!

Robert doesn't always have an easy time grasping every concept introduced, which is another comforting feature of this book. While gifted children often thrive on difficult and challenging ideas, it doesn't mean they don t struggle in their quest to understand. Many can think of a time when, on the brink of a large and difficult concept, they find themselves unable to quite *get it*. This can be especially true for children who have decided they're poor at math and have shut the door to it. Opening that door just a crack can sometimes be frustrating, exhausting and more than a little overwhelming for them. More than once Robert feels that way himself and expresses a desire to simply give up and leave, but how do you up and leave a dream? In spite of such moments and the high expectations and irritable nature of his fanciful teacher, Robert finds he misses the Number Devil on the nights when he doesn't visit. He also discovers, much to his amazement, that math isn't what he thought it was and that he actually enjoys thinking about the different concepts. The day he utilizes one of the Number Devil's concepts to solve a difficult classroom math problem, shocking his teacher Mr. Bockel, is a highlight in the story and sure to bring a warm feeling of satisfaction to any reader.

The humorous style and creativity the author employs throughout the story will inspire giggles and grins as readers struggle right along with Robert, sharing in his fascination and wonder at this strange and astonishing world of numbers. Somehow, this kind of struggling is fun and entirely different from struggling to memorize all those times tables or remembering to write down all the steps used to solve another boring word problem. Somehow, this world of math is very different than what math has always seemed to be!

Vividly colored illustrations by Rotraut Susanne Berner pepper the book and capture the creative and whimsical journeys Robert takes in his quest for mathematical understanding. Math concepts are extended with suggestions enclosed in colorful boxes throughout the story so that interested readers can explore further on their own. In our home, this translated to my older son sitting hunched over a calculator for several days, investigating his own theories of number patterns.

For those concerned about the Number Devil's rather creative math terminology, rest assured: the back of the book contains a warning from the Number Devil himself which explains to readers that the dream words that he uses may not be understood by everyone, since "Nothing in a dream is quite as it is in school or books." He provides a glossary of math terms listing both his and the accepted term used by mathematicians the world over.

Whether you have a math phobic child or one who lives and breathes math, *The Number Devil* will likely delight and open new worlds of discovery in diverting and interesting ways. Whether read silently or as a read-aloud, as a storybook or as a tool that might renew interest in mathematical thinking, this book is well worth seeking out for children of many ages. ❖

Above & Beyond

Susan Winebrenner

The Dyssynchrony of Being Different

"Getting along" with age peers at academic and social levels is emphasized in classrooms, especially in light of the recent violent episodes in schools. Educators hope to treat anti-social behavior at an early age as a hedge against violent outbursts in later life. In this kind of school environment, the pressure on gifted kids to fit in and be "normal" increases significantly. The dyssynchronous development common to gifted youngsters often makes them stand out when teachers are on the lookout for kids who don't seem to "get along" or "fit in" with other kids in the class. It's stressful for a young person's mind to be developing at a superior rate, while the body in which that mind lives plods along at the standard age-appropriate rate.

The very definition of "gifted" recognizes the dyssynchrony between the gifted person and her age peers. Pressure to be normal is often interpreted by gifted kids as pressure to hide their exceptional abilities in order to appear more like others their age. Everyone loses sight of the fact that these kids *are* normal; they're just not average! This can lead to gifted youngsters going so deeply "underground" that their giftedness may never surface again. What advice can be given to parents and teachers of gifted kids to help avoid or deter these potential problems?

My strong belief is that the earlier we teach kids it's okay to be different, the stronger all kids will be regarding their own differences. When I teach teachers how to improve learning outcomes for students with learning difficulties, they return to their classes to demonstrate how each student has certain learning style strengths which can be utilized to compensate for whatever weaknesses they may have. For example, poor spellers can improve dramatically when they learn visual or tactile-kinesthetic methods for studying spelling words. Students are then empowered to apply knowledge about their learning-style strengths to other areas. At the same time, they come to understand that their learning differences do not mean they're less intelligent, but rather that they now have successful techniques to use, ones different from those usually taught and tested. They are normal — but in a different way.

When a gifted youngster's mind, interests and attitudes are more compatible with those of kids two to three years older, her "social place" may actually be with those who are chronologically older and with whom she may actually appear more mature. Educators need to know that the difference between kids with learning difficulties and so-called "normal" learners is in effect the same as dyssynchronous development in the gifted. The sooner this fact is recognized, the sooner the concept of "geeks and nerds" will disappear, leaving a culture that understands and nurtures the many differences that are indeed "normal." ❖

***Susan Winebrenner**, from Michigan, presents workshops on a variety of topics, but her first love is teaching gifted children. She is the author of Teaching Gifted Kids in the Regular Classroom and Teaching Gifted Kids with Learning Disabilities in the Regular Classroom.*

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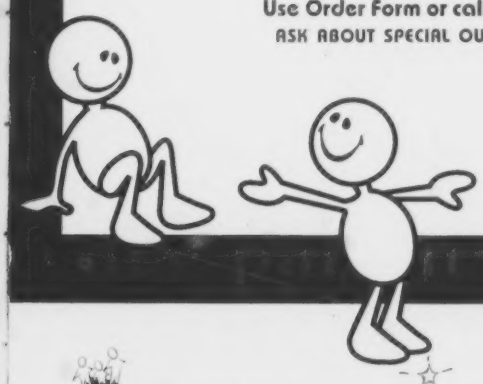

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Between the Lines

A professor in one of my first education classes defined curriculum as "everything that happens in school for students." After a few months as a classroom teacher I expanded that definition to "everything that happens–and sometimes doesn't happen..." It took some years and a lot more experience (in parenting as well as teaching) to learn that some aspects of school cannot be defined as curriculum, especially curriculum for gifted students.

The notion of school curriculum as an all-encompassing structure for educating kids has not just changed in *my* mind. Over the years the concept of curriculum has been revised to fit in with the popular educational buzzwords of the moment, e.g. educational reform, changing paradigms, political correctness. Sometimes gifted kids have benefited from such revision....often times they haven't.

I am upset–but not surprised–by the following statement: "One of the most persistent reports regarding gifted students' attitudes about the curriculum offered in their school is that their classes are a crushing bore" (Gallagher, J., Harradine, C.C. & Coleman, M.R. Challenge or Boredom: Gifted Students' Views on their Schooling. *Roeper Review,* 19(3), p. 132).

Although this issue of ***Understanding Our Gifted*** focuses on curriculum, we do not–and cannot–offer *the* perfect curriculum....there is no such thing. We offer a variety of types and views of curricula, with writers sharing their experience, insight, methods, research, conclusions and suggestions.

Read, ponder, consider, discuss what's best for the gifted children with whom you are in daily contact....and let us know your ideas on curriculum, what works and what doesn't work for the kids in your home and school. ❖

D.K.

FOCUS

Curricular Intervention for Gifted: Keys to Design

Carole Ruth Harris

All exceptional children fall outside of the norm, whether above or below. Many provisions have been made for those children whose learning needs place them below the norm. The IEP, or Individual Education Plan, is an effective tool for this purpose. But those on the other end of the curve, gifted children, also have special learning needs. Just as one cannot design intervention without taking into account the needs of those on the low end of the spectrum, intervention for the gifted must follow a carefully crafted and choreographed system in order to be effective.

But all too often, little attention is paid to their requirements within the learning environment. Either gifted children are given more of the same, with respect to curriculum, or they are given enrichment. While enrichment, often in the form of a pull-out program or self-contained class that follows a specific program, frequently provides a qualitatively differentiated learning environment, few, if any, programs provide an IEP or individual curricular structure with concomitant services in the form of special tutoring or mentoring specifically customized for a particular gifted child.

Educational provisions which would allow gifted children to maximize their potential with the same type of zeal and application as the IEP for other types of exceptional children are virtually nonexistent. This constitutes a serious gap in our educational system. There are many rationalizations for this pervasive deficiency of services. But for whatever reason, the gap is there, the children are growing, and that gap must be filled in a timely fashion.

G.A.T.E.S. (Gifted And Talented Educational Services) Research & Evaluation, was formed for the purpose of filling the gap with an array of services that enable gifted children to fulfill their promise. G.A.T.E.S. services individuals, schools, parents and teachers, providing expertise to assist gifted children whose development depends upon recognition of their special attributes and attention to their individuality (Harris, 1996b). Following are the portions of these services directed to provision of individual curricula for individual children.

There are many keys to unlocking the potential of every gifted child. This article describes the steps to be taken so that the key component, curriculum design as a tool for appropriate intervention, can be effectively applied to maximize the learning environment. Whether the child is mildly or profoundly gifted, has learning disabilities, is bilingual, or very asynchronous or combinations of these, the same steps must be taken, the same keys are utilized to formulate a plan. That plan then acts as a guide for intervention with derived curricula (Harris, 1987) — that is, curricula derived from the profile of the individual child, in much the same way that curricula for the culturally different must be derived from the culture — and an IEP is designed for other exceptional children. The IEP takes the lid off learning. The child can't go through the ceiling because there is no ceiling.

Instead of a one-size-fits-all or generalized approach, the curriculum is customized to fit the child and it operates in as unique a manner, providing intervention. Such intervention is not a magic pill, a drink to get Alice

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to grow bigger or higher or shrink her so she can socialize, but acts as the gate to fulfillment and joy in learning. It is an eight key process, with every key essential for the intervention. The eight keys are: interviewing and videotaping, video analysis, assessment, curricular design, implementation, and parent and school liaison and feedback.

Interviewing

The initial interview at G.A.T.E.S. Research & Evaluation is usually conducted with both parents, if possible and applicable, and the child. No siblings are allowed at the interview because all attention should be focused on the child without any distractions or sharing of attention. Prior to the interview, the parents are expected to provide a family background on a form designed for this purpose. This includes education of the parents, birthplace, what languages are spoken in the home and whether there is another adult, such as a grandmother, living with the family. The form also asks for any outstanding medical problems, the reasons for the consultation and a statement of goals for the child, such as in areas of intellectuality, creativity, self-esteem, commitment and responsibility. In addition, parents are asked to provide their assessment of the child's personality characteristics, such as outgoing, shy, assertive, compliant etc., along with any learning problems, such as ADHD and dyslexia. Parents are encouraged to provide as much information as possible on this form.

In addition, so that both time and money can be conserved, parents are asked to provide an anecdotal record about the child from the time of birth, all previous testing results, school records, along with products such as drawings and paintings or stories the child has written. Parents are encouraged to take pictures of large projects and products and tapes of musical performance and bring them to the interview so that complete records can be established. The parent is also asked to detail such preferences as hobbies, collections, computer-related activities, types of books read, athletics and even foods and games.

All such records and products assist analysis by providing insight and a fuller picture for the assessment profile and subsequent curricular intervention. It also saves several hours of interviewing time but gives the parents the opportunity to reflect and to formulate a multifaceted portrait of the child's attributes in an organized manner. As the process evolves, parents are encouraged to add to the portfolio.

The interview itself consists of a combination of discussion, observation, problem-solving, drawing and use of age-appropriate manipulatives. Because many children are nervous about coming to a strange place, the environment is designed to be as child-friendly as possible. At the same time, it is not geared to a specific age group because children from 3 to 18 come to G.A.T.E.S.

During the interview, which is focused on the child, the interaction between parent and child is closely observed. Parents are sometimes encouraged to participate in the activities and at other times are told not to interfere. The interview is orchestrated according to the situation. While the approach is flexible, interactions are guided so that the interview is conducted within a reasonable time frame. While a 5 year old cannot usually sustain more than an hour of this type of activity, a highly verbal 14 year old might elaborate on an idea at great length, and the interview could last as long as two hours.

All children who come to G.A.T.E.S. leave with several items to take home for creative exercises. There is no time limit on these exercises and the results can be sent when the child is finished. The session usually ends with "fishing" from the prize bowl later used for testing.

Videotaping and Analysis

Videotaping is part of the initial interview session. Used for clinical case study analysis, along with ethnographic research techniques, the video portion allows the interviewer to review the session in detail. Videotaping provides a means to achieve deeper insight because it acts as another eye and ear that replay the actions that occurred during the interview (Harris, in press).

The secret of good videotape research is organization of the visual data. This data, unlike the photographic data analyzed in the past, is dynamic because it records, not just a moment as in a photograph, but all the moments the subjects spend in front of the camera. It also changes with the perspectives utilized in repeat analysis as the insight of the researcher gains greater depth. Videotaping allows the interviewer to refine the analysis so that appropriate assessment can be carried out and appropriate tests used. Used with background information, the videotape provides a basis from which curricular planning, design and application can be derived.

Curricular intervention planning, therefore, begins at the interview

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session. It does not merely serve as a means to determination of the tests to be utilized but provides a means for insight into the learning attributes of the child and family interaction. More often than not, it uncovers any indications of learning problems along with insight into areas of strength.

The organization of the video data must be sufficiently comprehensive to enable the analyst to categorize the data effectively and efficiently. The data organization must have the capability of flexibility of adding or deleting categories and observations relevant to the purpose of the study: analysis for assessment with a view to curricular intervention. Because videotape provides another eye, or perspective, it assists the researcher to process all significant or relevant parts, first by actually recording and then by allowing the researcher to view a situation bit by bit in great detail.

The interview analysis report includes the tape analysis and review of all records such as previous test results and medical history, anecdotal records and other information collected by the parent. Recommendations for further assessment are then made.

Assessment

Assessment is directed to the provision of a learning profile of the child from which curriculum design is derived. Although tests are given and scores produced, the assessment depends upon observation and pulling together all of the information, including videotape analysis. Information is gathered to provide a comprehensive picture for the parent and the school. It also serves as a guide so that curricular design can be carried out.

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"Part science and part art," (Osborn, 1998) assessment at G.A.T.E.S. provides a comprehensive assessment evaluation and learning profile of the individual child's blend of gifts and talents through the use of instrumentation, behavioral observation, records and research conducted at the initial interview. Creativity exercises given at the initial interview and parent feedback are included. This establishes a basis for determining the scope and depth for the individually designed curricular intervention with a view to the child's personality, type(s) of giftedness, special characteristics and interests, and recommendations for intervention are included.

The assessment report and profile are followed by a conference to explain the profile to the parents and to answer all questions or concerns. As goals of the curricular intervention and central topics around which the individual interdisciplinary curriculum units will be clustered are included in the assessment report, discussion at the conference is directed to the way in which the curriculum will be designed and to some aspects of appropriate implementation.

Curricular Design Techniques

Curricula consist of a series of interdisciplinary units, each with a central focus, customized for the ability, skill level and learning style of the individual child. Each unit is a six-segment unit, and each segment has five parts. Although the unit is roughly equivalent to a six-week full-time curriculum, the terms "segment" and "part" are utilized instead of "week" and "day" so as to minimize pressure. The idea is that the pace is also individualized so that all learning can be carried out in a natural manner that suits the individual child and not an artificial, pre-set pattern.

No grades are given and only constructive criticism is permitted. Standards of excellence are established at the outset when the curriculum is implemented and mentors and teachers utilize student contracts to determine results and time frames of a given activity.

Key elements of curricular structure are descriptions of activities in a given part, an instructional outline of each activity and the rationale for the activity. There is usually a great deal of reading followed by

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discussion, crafts, science experiments and skill development in areas such as map skills and mathematical computation and application. Problem-finding, problem-solving, creative and critical thinking are woven into the structure of the curriculum. All curricula are designed to take the linguistic background and the culture of the child into account and many of the activities are truly culturally derived, without superficiality (Harris, 1996a).

Because socialization is a difficult area for many gifted children, the curriculum is not done in isolation but includes other children when appropriate and germane to curricular goals and learning needs. All units have activities directed to language arts, mathematics and science, social studies, art and music, and these are integrated throughout the unit and connected to the central theme.

A listing of materials is provided, with many available through the public library. Here the interlibrary systems are extremely helpful and even children in remote or rural areas are able to borrow the materials. G.A.T.E.S. designs curricula for children in many places within the United States and abroad, and curriculum design services are not confined to children in the immediate area. Most curricula listings include books, videotapes, compact disks, interactive CD-ROMs, reference materials and art supplies. While many of the items can be easily purchased or even found around the house, some, such as kits, are only available through distributors. The materials listing includes several distributors, providing choices to parents.

All units culminate in a concrete product or final project to be shared with the class or school. Final projects are designed to provide student satisfaction, increase socialization and provide an opportunity for organizational skills to be learned and applied. Final projects, such as books, painting, photography and puppet shows, are usually videotaped so that visual data are available for curricular refinement of subsequent units and for the information and enjoyment of the student and the family. G.A.T.E.S. has designed many final projects, which have resulted in, among others, "cities" being built, operas composed, books written and landscapes designed. In one case, a young child's art work is being considered for publication by a major publisher; in another, a full-length novel is in process.

Implementation: Mentoring, Supervision, Refinement, Follow-Up

The curriculum requires appropriate pedagogical techniques in order to work (Torrance, 1984) and should never be used as a study guide for the use of the student alone. The curriculum *must* be implemented by a teacher or mentor, with very high parent involvement. If the parent is homeschooling, then implementation should have the same kind of guidance as implementation by a mentor or teacher. Many of the books should be read to the young child. Recommended books need to be read by both parent and the more mature student, followed by discussion and review, as suggested in the curriculum.

Hands-on activities should be done with parent or teacher participation and close supervision. Integration with the regular curriculum should be done in a timely fashion. In the case of young children, the parent or teacher does the major part of any arts and crafts project or science experiments. All art materials or science experiment materials should be prepared prior to the implementation of the appropriate segment part.

The student will be able to accomplish some of the activities on an independent basis, and a student contract is included, but this, too, requires adult supervision and prior discussion with a view to clarification. An evaluative session, accompanied by constructive criticism, should follow each student contract implementation.

Depending on the degree of expertise of the parent and the situation with regard to one-on-one instruction available at the school, parents or, in some cases, the school may opt to utilize a mentor or mentors to implement the curriculum. G.A.T.E.S. then institutes a mentor search, and a mentor with the appropriate skills and personality is matched with the needs of the child. Mentors from G.A.T.E.S. vary greatly in background, ranging from undergraduates to professionals. Much of the time, parents or schools will have a mentor whom they already know. This is a highly desirable situation because the mentor will already have rapport with the school, the parent or the child.

All implementation should be supervised. At G.A.T.E.S., there are many options available. These are: mentor advisement, parent and school advisement, model lesson plans and videotaped implementation sessions.

Mentor advisement includes a

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mentor log, which consists of written feedback from the mentor for each implementation session, coupled with mentor conferences. School liaison involves conferences when needed or desired. The model lesson plan is designed for any part of any segment, and the choice is made by the parent or school. This is a full lesson plan with goals, questions and expected outcomes and includes means of feedback and evaluation.

For modeling purposes, a videotaped implementation session is conducted at G.A.T.E.S. with the child for whom the curriculum is designed, with techniques and approaches appropriate for the blend of giftedness and personality of that individual child. The parent and school are then able to keep the videotape and use it as a model for application to subsequent sessions.

Mentors may have the option of unlimited advisement via telephone or at the office for an 18-week period following initial curricular implementation. The number of log entries is also unlimited during this 18-week period. The mentor log follows a standard form, including description of approach, student reaction, student products, the mentor's evaluation of the session and questions for G.A.T.E.S. Implementation feedback is given for each mentor log entry with a hard copy and disk sent to the parent, ensuring continual refinement and follow-up. The more frequent the use of the log, the better the implementation and the more effective the curriculum.

Parent and School Liaison and Feedback

The curriculum implementation needs constant feedback from the parent, with some expected from the school. The child is growing and changing, and other factors, such as age-peer interaction, school attitude and scheduling enter into the picture. Curriculum, child, parent, school and mentor form an ever-changing dynamic. There may be materials to be added, logistics to be considered, future planning to be made, integration with the regular curriculum to be carried out. A curriculum is not a kind of vitamin pill, to be taken a certain number of times; only a flexible, open approach can work. The curriculum acts as a guide, with some parts going faster and others more slowly, some to be followed literally and some enhanced with new materials, trips, programs and new connections to other gifted children. In other words, the curriculum is a guide for use with a complex child. The more gifted the child, the greater the complexities, and only school liaison and parent feedback can provide effective implementation and maximize the child's potential, a potential that grows higher with appropriate curricular intervention.

Case Examples

No case is typical because the children who come to G.A.T.E.S. are highly atypical. Selected case examples are given here in abbreviated form, and they may provide some insight into the intervention and implementation process.

Case 1

Daryl was a highly artistic child who was unhappy, frustrated and low-achieving. The only thing he appeared to be interested in was art. Teachers at his school recognized that he did not want to engage academically, but instead of reaching him through his art, they insisted that he "was not trying." After testing with the Stanford-Binet L-M, examiners at G.A.T.E.S. found a discrepancy of 30 points with the reported scores at the school. This is not unusual (Silverman & Kearney, 1992; Revel, 1997) because the tests that were used at the school usually do show discrepancies with the Stanford-Binet L-M scores and also because Daryl was ill at ease with the school examiner who had apparently not established rapport (Osborne, 1998) and was consequently uncooperative.

Since the school insisted that his art was not important and that "even Picasso knew how to read" (the assertion of the principal), Daryl's curriculum was implemented by a mentor on an early release from the school at the insistence of the parent. The mentor kept in close touch with G.A.T.E.S., and the intervention proved highly successful, with Daryl and the mentor forming a close, warm relationship. By semester's end, it was apparent Daryl's family would be moving to another state, but the curriculum was continued there, with the cooperation of the gifted and talented coordinator in the new school district. A new mentor was found for Daryl, who still writes to his old mentor. He misses her.

Case 2

Norman was a seven year old boy who could not read but thought that history was a "candy store." He had a low self-image but was highly athletic and popular with other children at

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the school. Norman showed remarkable facility for memorization of historical facts, coupled with sophisticated vocabulary use. He had never been tested. After interviewing at G.A.T.E.S., Norman was tested and found to have an IQ of 160+, coupled with high creativity, a hearing vocabulary and verbal functioning equivalent to age 14 — and dyslexia.

After the parents very carefully laid the groundwork at the school, a meeting there produced instant results: a curriculum designed for Norman with release time within the school day, interface with teachers and a mentor search from G.A.T.E.S. For the dyslexia, the parents found a tutor, and reading instruction was also incorporated into the school day. The mentor was a foreign exchange student at a local college, who shared Norman's passion for history, and together they plunged into the curricular intervention. Norman's parents reported "a changed child," and he went on to continuous academic success with curricular intervention integrated into his program.

In each of these cases, parent advocacy and vigilance was the crucial factor. Implementation of the curriculum involved feedback and refinement as well as mentor capability and progress analysis by G.A.T.E.S. In each case, curricular intervention proved to be one of the keys to growth. The children are still growing and changing, but so is the intervention, and implementation feedback will be important in planning other units.

Although curricular design for intervention is an important key to growth and fulfillment for the gifted child, the intervention must be implemented correctly. Curricular intervention cannot happen in a vacuum. Knowledge of the child must precede program design, and implementation and feedback must follow it. Intervention is not a magic pill, and it does not work by itself. To expect it to do so is tantamount to obtaining a prescription for an illness and then putting the bottle in the closet, taking the medication when you feel like it because you know how to swallow and you feel better anyway.

Any curricular intervention must be designed for the child, with suitable books and other materials, all of which should be reviewed carefully and integrated into the curricular structure. Curricular design for intervention should combine instructional plans for both weaknesses and strengths, be interesting and challenging, and allow for both independent work and socialization. Since all subjects are connected, the curriculum should be realistically multidisciplinary with a wide spectrum of activities and projects that reward the student and provide satisfaction in his/her accomplishment.

All books and other curriculum materials must be made available for proper implementation, the intervention plan must be followed and not utilized casually, and appropriate pedagogical techniques must be instituted. Just as a child is dynamic, so must the education of that child be, and guidance and parent participation will assist the curriculum key to work, turn the lock and open the gates to realization of potential and joy in learning. ❖

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FOCUS

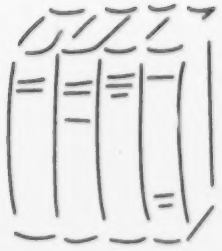
Teaching and Learning for Academic Survivability

Jay A. McIntire & Jonathon A. Plucker

Academic survivability behaviors are coping mechanisms students use to increase intellectual stimulation in response to lack of school challenge.

Defiant boredom, as exemplified by James Dean, has become a cultural model which appeals to many adolescents. Unfortunately, adolescent boredom is more than a harmless fiction or stereotype in our schools today. Probably all students at some point experience boredom due to a bad match between curriculum and learning style, general fatigue or lack of interest. Students with exceptionally high ability experience all of these, but sometimes boredom for them is brought on by insufficient challenge and questionable applicability of their school work. Many young gifted students demonstrate a great thirst for knowledge — a thirst not sated by educational activities which are simplistic, rote or disconnected.

Teachers who recognize boredom and understand its causes can adapt learning environments to better match the needs of individuals. Students who recognize their own boredom and have been taught positive ways to respond to it are better prepared to cope and learn, regardless of when (or if) the educational fit is improved by the teacher. In this article, we describe some young adolescent behaviors that teachers, parents and students can look for to recognize when students are not simply bored, but are seeking additional intellectual stimulation. We also suggest which of these behaviors are likely to be detrimental and which may, in fact, be proactive responses that sometimes serve students well.



Middle level students who are not getting enough intellectual stimulation in school are likely to demonstrate one or more "academic survivability" behaviors (Plucker & McIntire, 1996). Not all these behaviors are unique to students who are understimulated intellectually, but the goals of these coping mechanisms may be different for gifted students than for their more typical peers. Students who become bored due to lack of sufficient creative or academic challenge and whose responses to boredom are efforts to increase intellectual stimulation are said to be engaging in academic survivability (AS) behaviors, since these strategies may keep such students awake and alert in order to be prepared for the next learning opportunity.

Spontaneous AS responses range from ones that can increase thinking and learning to ones that compound boredom, lead to decreased learning and may eventually evolve into the sorts of self-defeating behaviors that have been observed in high school students (Csikszentmihalyi, Rathunde & Whalen, 1993). In fact, the high school students described by Csikszentmihalyi and his colleagues could be described as those who have not survived academically and have become academic casualties. Since some of the AS behaviors can be applied either productively or unproductively, it can be important for teachers, parents and students to

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be aware of these responses and make them intentional and productive, rather than habitual and potentially disruptive to learning and healthy development.

Why are gifted students in our schools lacking sufficient intellectual stimulation? There are numerous well-documented characteristics of American schools that seem to be potential scapegoats, including dumbed-down curriculum (Chall and Conard, 1991), limited curricular differentiation (Westberg, Archambault, Dobyns & Salvin, 1993), curriculum that is very wide but not very deep (National Center for Education Statistics, 1998) or an educational system that requires all students to spend the same amount of time learning the curriculum regardless of differences in their prior knowledge, learning speeds or abilities (National Education Commission on Time and Learning, 1994).

In an ideal world, teachers and students would easily recognize and address situations in which individual students were so well versed in a subject that learning would be better served through a differentiated curriculum. Teachers, student and parents, perhaps with input from counselors, mentors or others, would devise alternative or adapted learning opportunities for the student. In such a world, the gap between the learning level of each student and his or her instruction would be small. Importantly, the time between the onset of the mismatch and the response would also be very brief. The best we have seen so far is learning environments in which teachers and students communicate openly about their interests and needs and negotiate how time is spent in order to maximize achievement of both teacher and student goals. Developing such systems takes time and effort, and it usually requires numerous positive factors beyond the direct control of either teachers or students.

For teachers and students who work in more typical settings, understanding common indicators of lack of challenge is the first step toward overcoming the problem. Often it is the student who makes the first effort at adapting. All too often the student adaptations are the only ones. Regardless of whether or not the teacher and school are able to adapt, it is valuable for students to recognize when they need additional challenge and know how to temporarily direct their responses to boredom into useful outlets. It is also valuable for teachers to recognize when students are not stimulated and to tolerate, if not encourage, productive academic survivability responses.

Some students come right out and say, "I'm bored," or "This is too easy," but by the middle level most students have been socialized not to make such public comments. Instead, they just find other activities to occupy their time and minds. Whether students find single class meetings or entire courses to be unstimulating, it is essential for teachers to be informed or to recognize the educational mismatch themselves. Some ideas relating to self-advocacy for adolescents can be found in *The Gifted Kids' Survival Guide* (Galbraith, 1983). Similarly, teachers who discover that their course is not meeting the learning needs of one or more students can make changes in future lesson plans to differentiate accordingly. Unfortunately, neither of these address what teachers and students can do in that seemingly endless time between loss of interest and the bell at the end of the class period or grade at the end of the year. What students do in between is hone their academic survivability skills, for better or for worse.

Academic Survivability Behaviors

Focused Curricular Involvement

The most direct response to lack of challenge and the coping mechanism most likely to yield increased learning is focused curricular involvement. Using this coping mechanism, young adolescents throw themselves into learning, often seeking additional experiences or doing additional reading related to their class work on their own time. Students exhibiting this response may begin digs in old cellar holes after archeology lessons, bring in examples from old records to illustrate a point made in music class, independently start collecting found objects demonstrating Fibonacci spirals after a math lesson or bring in outside books to share with the teacher and class. Students in this mode are likely to engage the teacher in discussions beyond the scope of the material or encourage their classmates to consider broader or deeper issues relating to the topic at hand.

While this strategy is almost always conducive to learning, too often youth who get so involved in their work have difficulty not alienating their less interested classmates. By the time students reach adolescence, it can be difficult for them to maintain good relationships with their aloof and intentionally disinterested peers while openly demonstrating a zest for learning.

It is important for parents and educators to encourage students to delve into content that intrigues

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them, but it is also important for these adults to assist the student to do so in such a way that does not undermine peer relationships. Some students and parents report that focused curricular involvement is more tolerated in homogeneous classes of gifted students, although it has been suggested that heterogenous classes designed to encourage such enthusiasm in all learners might be possible (McIntire, 1998).

One author observed, in a class in which students discussed court cases illustrating the principles of the Bill of Rights, a student insisting that the teacher engage in a discussion of how the underlying principles of one right were essential to understanding the simple point the teacher was making to the class about another right. The teacher demonstrated his awareness by providing the student encouragement to explore this issue individually, offering time for the student to do his thinking and Internet search on the subject and identifying a time when the student would be given a chance to report his findings to the teacher.

Academic Survivability Behaviors

Focused Curricular Involvement
Selective Attention
Extracurricular Activities
Involvement with Others
Selective Effort/Lack of Effort

Selective Attention

Students who find academic demands to be easy or who have already mastered the content often demonstrate selective attention. Frequently, these students are visibly engaged in other activities and appear to be off task, yet can respond correctly to questions or otherwise show they are paying partial (and often sufficient) attention. Sometimes students actually fool teachers with such old favorites as the-book-in-the-desk or the-one-book-inside-another tricks. The most frequent selective attention strategies we have observed during class discussions or lectures were "daythinking," completing homework from other classes and reading. In some cases, divided attention involves other academic survivability behaviors, such as involvement with others. (We caution that these behaviors sometimes coincide with behavioral responses to boredom which do not have intellectual stimulation as their goal, such as daydreaming.)

Teachers are more often aware of students' divided attention than most students think. Many teachers opt to ignore such divided attention if the student can demonstrate proficiency in the class and does not interfere with the learning of others, but some educators find such behaviors to be personally insulting and insist that all other books, homework or other extraneous material be placed out of sight and optimistically hope that this also gets it out of mind. When selective attention is not tolerated and no differentiation of educational experience is offered, students are left to select another academic survivability behavior. Teachers who punish this response to boredom ignore the real problem while squelching students' regulation of their own learning.

One science teacher, in referring to a 7th grader, said that he had spoken with her about her frequent reading and reminded her that it might diminish her ability to do well on "pop" quizzes and other graded assignments, but he told her he would not interfere if her reading didn't bother others or appreciably diminish her grades. He also differentiated her curriculum as much as he was able. In an ideal situation, he would have been equipped to provide her with a challenging science experience every day, but he gave her something that was also very important to her long-term success — responsibility for her own choices within the parameters of his expectations for her. The respect in this relationship flowed both ways, perhaps because of the teacher's ability to demand high performance while also demonstrating understanding and flexibility.

Selective attention can sometimes be a very productive coping mechanism and should not be perceived as an insult by teachers. Students who choose to do other things in classes they have already mastered are usually trying to make valuable use of their time, not to annoy. Such behaviors, when observed in adult employees who have completed their tasks and find other ways to be productive on related matters, are characterized as "initiative" or "going the extra mile."

When teachers ignore the curricu-

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Teaching

continued

lar mismatch and tacitly approve of selective attention, it gives students the message that they will not be bothered if they don't bother others. While this is not bad in and of itself, it also implies that the teacher doesn't care if students learn. It is far better when such behaviors are accepted under agreed upon circumstances, allowing the teacher to have some control over the content and timing of the use of outside material or to insist on high achievement or some other desirable goal in trade for the privilege.

Extracurricular Activities

Some students decide that school is something they must tolerate but that learning and striving for excellence are better found elsewhere. Gifted students who excel regionally or nationally in athletics, music, chess or more traditionally academic areas, such as geography and spelling, sometimes do so at the expense of their formal schooling. It is not always parents who push such schedules; it can be students who love a challenge and have not found it in school. For students who keep exhaustive schedules, the overload becomes the challenge.

We know of adults who attended academically challenging summer programs for many years and report that they thought of their summer programs as their "school" and their regular schools as places to spend time with their friends and just get along. By the time students are adolescent, they can discuss with their parents the roles that various school and non-school activities play in their lives. As one of us used to tell his students, "Don't let your schooling get in the way of your education."

Most gifted students who assert their efforts outside of school continue to do very well in their school work by most standards, but not always. Teachers who are able to learn of the outside interests and learning passions of their students can improve the chances of engaging them academically by offering assignments that contribute to development in students' chosen areas. One gifted student, whose passion was more theater than school offered, got motivated to do a science fair project when she came upon the idea of studying whether or not people perceived different emotional states when looking at ambiguous pictures of people under different shades of lighting.

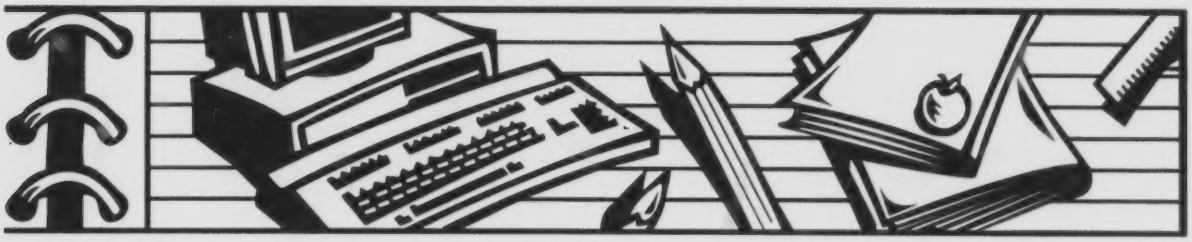
Involvement with Others

Young adolescents of all types are inclined to seek social opportunities during school, but underchallenged students frequently seek out teachers as well as peers. Sometimes this is due to their focused curricular involvement, such as students wanting to talk about their outside reading with teachers during recess, before school or even out in the community. Gifted students seem to seek out other highly able students for discussion, other communication and, especially, for anything funny.

Teachers who assign in-class work often find that students who know the material well complete tasks quickly, or those who do not do the assignment at all have lots of time remaining for socializing. Although this coping mechanism may be very stimulating for some students, it is less likely to yield learning outcomes other than social ones. While there is nothing wrong with social goals, they usually can be sufficiently developed outside of class time. Teachers who seek to minimize this sort of response to boredom may opt to reduce the amount of class time spent on individual seat work or may provide differentiated assignments allowing each student to work at his or her learning level.

Selective Effort/Lack of Effort

When using selective effort, students give effort to those classroom activities they find to be worthwhile, stimulating or fun and ignore or refuse to participate in activities they find somehow lacking. At its best, this strategy has much in common with selective attention; at its worst, it approximates dropping out without leaving.



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Teaching

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When students apply this AS strategy, they may have already lost respect for the teacher(s) or for school in general. It is essential that teachers, parents and students come to an understanding that the student has a right to have input into his/her education and to be challenged, but also that the teacher has training and understanding which the student does not. Parents can help students in this situation by encouraging them in their school work and by making sure that they have some regular, rigorous learning experiences outside of school.

At its worst, this coping mechanism doesn't even belong among a list of academic survivability behaviors. Instead, it should be listed as an exemplar of academic failure. Students who show no willingness to attend and focus on even the most interesting and challenging work have chosen to fail (at least in school) and almost certainly will. They may be able to coast by, passing tests on the basis of their test-taking ability and background knowledge, but when young adolescents exhibit such blatant disregard for their education, they are at severe risk for dropping out entirely. While no studies have explored whether this coping strategy is a direct precursor to the sort of complete disengagement and failure noted among high school students, the types of tuning out seen in the worst cases of this behavior in late middle schools appear to be very common later on. For many adolescents, middle schools may be our last chance to engage them academically before they simply tune out.

Summary

Without training or input, young adolescent students appear to discover and utilize five responses to insufficient academic stimulation. Which of these academic survivability responses they discover, choose and habituate are of critical importance to their relationships to teachers, to peers and to learning itself. Teachers and parents who are aware of these AS behaviors can teach students to select and use them effectively as leaders of their own educations. Teachers who are familiar with these behaviors and learn to help students make the best of them provide their students with not only input into their own educations, but also with proactive and metacognitive skills which will serve them through their school years and beyond. ❖

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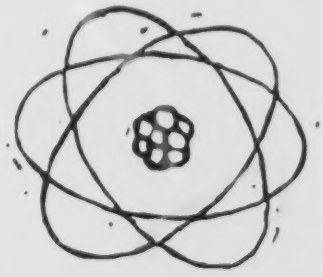

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S.B.

Problem-Based Learning and Gifted Students

Jill Burruss

Problem-Based Learning and Gifted Students

The e-mail message from the vice-mayor to her husband appears innocuous at first, something about getting home late due to a conference. But there is a postscript directing him to a rash on his son that has the baby sitter concerned. So begins *Models: A Study of Populations*, a Problem-Based Learning (PBL) unit for middle school students that ultimately connects the rash to a bite and tics, deer and population biology, modeling and control. In the process of attempting to resolve this issue, the students will investigate deer populations, diseases and vectors, computer modeling, politics, animal control issues and hunting and property rights. They will experiment with both various biological sampling techniques and folk remedies, purported to keep animals out of gardens. They will, among other things, report in town council meetings, analyze hometown newspaper articles, attend scientific meetings, speak with wildlife biologists and local hunting groups, interview horticulturists and exterminators, assess possible resolutions, debate issues such as controlled hunts in residential areas and gun control and write persuasive articles and letters to the editors. They may also be engaged in various other activities depending upon the amount of time available, their interests and specific content and skills the teacher wants addressed.

Although the situation initially appears rather amorphous, the unit is carefully planned and has solid content and high level processes which are aligned with national standards; it stretches not only the students' minds but also those of the community members who will assist them in their search for acceptable, rather than perfect, resolutions to this situation. This is Problem-Based Learning in action; it is thinking and problem-solving in context (Hyde and Bizar, 1989). It is relevant, active, intensive and complex. It is also a way of teaching and learning that brings students back asking for other problems to investigate.

Schmieder and Michael-Dyer (1991) while reviewing science education and curricula called for the following specific curricular changes: more authentic assessment of students; more critical and creative thinking and problem solving and less emphasis on rote memorization; more learning for understanding and less learning for grades; more time focused on student learning and less on adult needs; and more diverse kinds of teaching and learning opportunities. We in education continue to look for strategies or frameworks that will bring these suggested changes into a usable format for both educators and their students. Problem-Based Learning is just that kind of curricular framework. It addresses these needed changes while engaging students in relevant problems that interest them (Nagel, 1996). It is constructivistic in orientation in that students construct their own meanings of events, situations or problems and discuss those meanings and interpretations with others (Wheatley, 1991). It is active/interactive learning at its best. Students are internally motivated to learn, discover, explore and analyze. They are vested in the problem, in the learning and in the transfer of their knowledge to other areas. As O'Neil (1992) noted, "Problems are not just a way for students to apply knowledge and skills after learning content, but a means for *learning* the content. Much of the learning arises from a need to know something to

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address the problem" (p.4).

What exactly is Problem-Based Learning?

Problem-Based Learning is an instruction framework that, through student and community interest, provides an appropriate way to learn sophisticated content and high level processes, all while building individual self-efficacy, confidence and autonomous learner behaviors. Using PBL, students attempt to solve problems rather than learn how to problem solve (Stepien, Gallagher, & Workman, 1993). It must be noted up front that there are numerous types of problem-based learning discussed in the literature; the one presented in this article is characteristic of the format utilized by the Center for Gifted Education at the College of William and Mary and the Illinois Math and Science Academy. This version of PBL stresses the following goals:

- development and retention of an extensive interdisciplinary content base;
- development and utilization of sophisticated, flexible, expert-like problem solving skills;
- development and enhancement of self-directed learning strategies; and
- development of life-long engaged learners who are motivated critical consumers.

But this still doesn't explain what PBL really is. It is a curricular approach that embeds serious content and processes within an interesting, relevant, ambiguous, problem-solving situation. As is common in the "real world," there is no single solution to the problem; rather, there are multiple perspectives and resolutions possible, some better than others, some more cost-effective than others, some quicker than others. Students learn to weigh consequences and alternatives and go with the best resolution at the time, knowing that things change and they may never have all the information necessary to make a totally informed decision.

So it all starts with a question, an ill-structured problem, a situation ... something that adults (and students) might or do face in their lives. The problem is nebulous as real problems are, with multiple perspectives impacting choices of action and inaction. *Acid, Acid,* an upper elementary level PBL unit, begins with a truck accident on a major interstate which results in liquid spilling out of the truck, onto the road and into the waterway directly below the road. The driver is unconscious, the liquid is unknown, and the backup on the interstate continues to grow. Action has to occur, but there are repercussions for both inaction and for incorrect action. We all experience such problems in our daily lives and there are lessons to be learned from exploring them to their conclusion. And the classroom is a safe environment to make such choices and commit to certain actions. There are also natural deadlines and required responses (reports, press conferences etc.) depending upon the problem. The format, however, places teachers and students in roles that are different from those generally seen in the classroom. The teacher typically conceptualizes the problem, develops the timeline, identifies necessary content, embeds the assessments and may organize the resources, but the students really do the investigatory work. Teachers become metacognitive coaches and questioners. They are there to occasionally provide information but more often to question, model and scaffold student learning. Students learn content and processes because they need the information and the skills to resolve the problem and all its associated sub-problems. Teachable moments abound in PBL units because students recognize, as do their teachers, that they really don't know all they need to know to resolve the situation. And because they are in charge of resolving it, they come seeking information, access to information or simply suggestions. So what we have is rich, complicated, interdisciplinary content, enmeshed in an interesting, ambiguous, realistic problem, constrained by realistic goals and deadlines, that honors multiple perspectives and acknowledges inherent messiness. As might be guessed, PBL units generally are fun, frustrating, messy, long and very complex. One problem begets another problem which in turn begets more problems and so on. Real life is not simplistic or neat; neither is PBL.

PBL does address many of the changes suggested by Schmieder and Michael-Dyer (1991). PBL is all about critical and creative thinking but also focuses on a strong sophisticated knowledge base and an internal need to know and explore. There are many embedded authentic assessments as students have to write letters, interview people, complete forms, compute quantities, explain ideas, read maps and support opinions and decisions in the course of the unit. They also employ many different kinds of instructional formats, small group and individual work, direct instruction, experimentation, collaborative learning, use of technology, analysis of written and spoken materials etc. PBL focuses on student developmental levels and honors student interests and learning styles as it provides varying tasks and formats within teams and individually. And finally, the roles of the participants, educators, students and community members become less distinct as the goal directed activity turns them all

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into motivated learners (Savoie & Hughes, 1994).

What are the elements of a PBL unit or curriculum?

PBL is a framework for instruction and learning, but we commonly see it presented as discrete, inserted curricular units (or "post-holes" as Stepien & Gallagher, 1993, call them) rather than as a full-time full-course instructional approach. PBL units may be composed of: an ill-structured, unclear situation which stimulates questions; interdisciplinary but concept-oriented content; opportunities for experimentation or investigations; multiple resolutions; embedded authentic assessments; a focus on self-directed learning and metacognition; and a relevant culminating activity. The ambiguous situation should be intriguing enough to stimulate a need to investigate and encourage the development of additional questions. Every new definition or small resolution should lead to new information and problems and thus the situation is decidedly reiterative. Although we have developed PBL units that use complex science as the central focus and thus stress scientific thinking, analysis, discourse and skills as inherent elements (Bereiter, 1992), other disciplines can be used to focus the problem and direct the exploration. Regardless of the general orientation, PBL units are almost impossible to keep focused within only one discipline. The act of investigation and questioning always brings other areas and topics into the activity, regardless of the teacher's intentions.

In these activities, the students generate the learning agenda, organize and negotiate tasks for the group and themselves, identify needed information and skills, seek that information through various resources, assess their findings and interpretations while focusing on their own thinking. This focus on metacognition is an important element of PBL units because it improves the transferability of the knowledge and skills to other problems and situations, something that is very difficult to do in regular instruction. This metacognitive thinking not only allows students to analyze their own problem- solving skills but it also lets them evaluate the effectiveness of their high-order thinking/questioning and thus make changes as necessary. They learn to think and reflect as adults and generally as specialists within certain disciplines and areas.

An additional element, career exploration, is an added bonus to this curricular format. Students take on different stakeholder roles throughout the unit and thus have to know what those individuals really do in their positions. Since we are always looking for ways to correct misconceptions about adult work, this provides a reality check that is appropriate and useful.

As noted earlier, teachers take on a different role in this type of experience. They do a lot of modeling of thinking aloud, questioning, personal skill assessment and resource management. (The questioning component has been identified by many teachers as probably the most difficult but critical role.) They also actively monitor student and group progress and coach students on how to work as contributing members of a collaborative group, how to resolve conflicts, how to question group members and others and how to self-monitor. This coaching and modeling provides the necessary scaffolding for ensuring success and motivation. It also allows the teacher to adjust the level of challenge for individual students and to provide new information or deadlines to prevent unneeded frustration. Finally it allows the teacher to take on a learner's role within the situation, which reinforces the concept of life-long learning and universality of skills across ages. Since the teacher does not have to (in fact probably cannot) know everything about all possible tangential topics brought up in one PBL experience, they have to admit they do not know and determine a strategy to move forward. Teachers in PBL units do not have to be the ultimate experts on everything. They are, however, invaluable guides. Because teachers no longer act as experts, students must find other experts and become experts themselves. And since many of these ambiguous problems impact the community, collaboration between classroom, community and the home becomes a more functional reality. Teachers report increased parental involvement as parents become involved in both the investigation and in discussions about impact and consequences.

Special connections to the gifted learner

PBL has many components that make it a good format for gifted and high achieving students (Coleman, 1995). The focus on autonomous learning behaviors and metacognition, especially beginning in elementary school, reflects the cognitive differences we find within the gifted population. There are many different exercises and activities investigating the problem, and that works with the fact that gifted students do not necessarily have to be gifted, or even interested, in all areas. The content can be highly sophisticated, the problems complicated or convoluted, the issue realistic, and gifted students tend to like the work even more. For all the

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simultaneous processors in the group, opportunities abound to do multiple things at the same time. For the introverts, there are ample opportunities for individual as well as collaborative work. For the intellectually precocious, there are opportunities to showcase one's knowledge in a safe, non-threatening environment.

However, PBL is not just for gifted students. It has been used quite well in average heterogeneous classes with additional structure and alternative activities provided for students who need more structure and support. It has also been used to organize multiple independent studies around a single situation and whole-school thematic experiences.

Benefits

The formal benefits of PBL are development and transfer of:

- higher order thinking skills: questioning, prediction, hypothesizing, problem solving, critical thinking, creativity and metacognition, to name a few;
- knowledge of sophisticated content and technologies;
- team and individual work skills; and
- autonomous learner behaviors.

There also is a down side to the use of PBL. It is very labor- and time-intensive. It requires a lot of plotting and planning and running about before any ill-structured problem can be used in the classroom. It is resource-intensive as there is no single book or source to give us all the information necessary to resolve a situation. And certainly it is content- and process-rich. Since the ambiguous situation is realistic, the content must also be as sophisticated and current as is possible. Sometimes students choose to go in directions the teacher never imagined; thus being familiar with the basic content and the skills is really critical. We always recommend a team approach if possible, so that the content and process issues can be shared among a group of adults rather than on the shoulders of only one. The teacher is never out of the loop; students and the process must be monitored and assessed constantly. Management skills are critical to make this work well, as are honed questioning strategies to keep the momentum going.

Implications

It is difficult for students to return to full-time direct instruction when they've been in charge in a PBL unit. Life in the classroom cannot go back to the way it was, pre-PBL. Once students learn to question and to analyze, they want to continue doing so. This is one of the real strengths of this format. Students like to do PBL; it makes sense to them. It keeps them involved in their world and engaged in adult work. It certainly isn't boring. And many teachers really like to use it for the same reason; it's fun for them, too. Things are always different, the unexpected surprises, and new questions get asked. PBL exemplifies the concept of life-long joyful learning. ❖

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Carousel

Perforating the Myth: Gifted Education Is Elitist

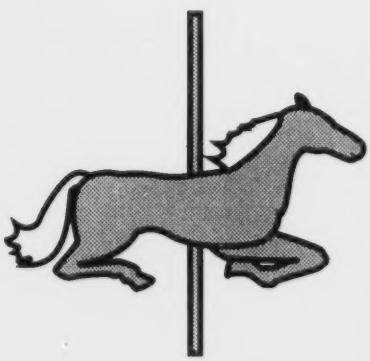
Hope Sargeant

With this issue, ***Understanding Our Gifted*** *launches a new column which will cover different interest areas central to gifted children and our roles as those who live and work with them. Four writers will rotate authorship of this column, bringing with them a vast store of diverse experience in the field. Hope Sargeant, whose work appears first below, takes on the task of exploding myths in gifted education; Monique Lloyd will explore the many avenues of advocacy; Rick Olenchak will look at specific educational and school-oriented issues for the gifted; and, completing the quarterly circle, Cal Roberts will take the interior view, looking at the social and emotional aspects of the lives of our gifted children. It is with great pleasure that we present:* ***Carousel.***

At a party one evening a year or so ago, I made the mistake of mentioning to someone, a public school teacher, that my daughter would be changing to a local private school for the coming academic year. He grew silent at that, letting me rattle on about her many special learning needs which weren't being met by the public school.

Finally, I think he just couldn't take it any more. "But...but, that's..." he sputtered, "*...elitist!*" He spat it out, as if even the word was dirty in his mouth. His was the ultimate insult, a commentary not only on my decision-making ability, but on my moral character — a denial of truth, justice and the American way.

I may poke a little fun at it now, but at the time I was taken aback. No one had ever called me that before. Me, a veteran protester of wrongs from wars to nuclear power plants; me, an elitist? "Well," I remember stammering, "given the choice between losing my daughter and being politically correct, I'll choose my daughter any day." My response didn't satisfy him, and, still disgusted, he drifted away. My answer didn't really satisfy me, either.



I suspect I'm like other parents of gifted children in wishing we could just set aside the arguments and get on with the business of giving our kids what they need to keep growing. But I also suspect that this issue of elitism is the Big Issue, the elephant sitting in the living room while everyone tries to tiptoe around it, unwilling to say what we see, never able to get out of the room because the exits are blocked.

How does this myth of elitism affect gifted education? In search of answers more substantial than the one I offered the teacher that night, I began with Lisa Wright, Director of the Hollingworth Center for Gifted Education at Teachers College, Columbia University, asking her the simple question: *Is gifted education elitist?* Her clear-cut answer: *No.* "In our department, we see gifted kids as part of special education. These are children who have certain different kinds of cognitive abilities, and because of that they require some kind of differentiated services.

"We provide children who are part of special education with appropriate services that meet their needs, based on the profile each child presents. No one is challenging that it is elitist or inequitable when we give children what they need in order to realize their potential. The whole argument of gifted education being elitist is really unfounded, because if in

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fact it is elitist, then it is elitist to meet individual needs of children. Education hasn't borne that out; one of the basic premises of education is to meet the individual needs of kids."

According to Wright, gifted education has gotten into trouble when gifted kids have been provided with programs that are appropriate for all children. Instead, gifted children should be provided with services that address the specific needs of their particular profiles. For example, it would be appropriate for a 5th-grade student who is mathematically precocious to do mathematics online through a university distance learning program. "I think teachers and parents can see that it's appropriate for that child, but it's not appropriate for the majority of the other kids."

It sounds good. Some school districts express similar confidence in their programming for gifted students. Teachers talk with animation about tiered assignments, revolving door activities, theme-based learning projects. But if the classroom activities are so good, so exciting, then why don't parents of gifted children share the excitement? Why do many parents, particularly parents of the highly gifted, sound so despairing, so desperate, so bitter?

There are several factors at work. Kathi Kearney, instructor of gifted education at Iowa State University, explained, "It's because a lot of times, gifted children, especially highly gifted girls, don't show how unhappy they are until they're at home in a safe environment. I've seen many kids get very depressed, and that may not show at school. In a school environment, that may show as a compliant, quiet child."

Another factor is ignorance. According to Kearney, textbooks for teacher education rarely include information about gifted children, or if they do, the information is not accurate. Teachers are also not taught how to differentiate lesson plans for children with special needs. Wright sees that many teachers just need help with strategies. "We don't have a lot of research which emphatically says, this works best for gifted kids. And so we can't come back to teachers and say, 'Do this, because here's a body of research,' the way we do in other areas of special education. I think teachers find that frustrating."

But I suspect something less tangible — and more potent — is at work. I used to joke that in the neighborhood school, intelligence was not considered developmentally appropriate. But it isn't funny when your child comes home each day, as mine did, and lies in a fetal curl on the carpet, crying over something she cannot name. That "something" seems to be rooted in a belief that to be capable and eager to learn more than what is offered is not only unhealthy for that particular child, but somehow harms the democratic fabric of the classroom, the school and society.

I first noticed the attitude and heard "the word" in comments at school: A school librarian told me that to alter instruction in any way just because a child was capable was "elitist." A 1st-grade teacher said, "I don't individualize — unless a child is behind."

After my daughter started her new school, she remarked on an obvious difference. "My old school (grades K-2) didn't have any chapter books in the library. My new school library has lots of them!" Was reading above grade level not developmentally appropriate? Was it elitist?

A similar suspicion of intellect exists around town and, I suspect, across the country. A father of a profoundly gifted son tells how a neighbor chided him for not forcing his son to play soccer. "They start planning the high school teams now," he was warned. The boy is 11. So it's okay, even expected, that he devote his thoughts of the future to sports. What would the neighbor say if she knew the boy dreams about which college he'll attend?

Or what of parents who shudder over those "awful" brochures the Institute for Academic Advancement of Youth (IAAY) sends out? "Why would I do that to him over the summer?" one mother said. "Summer is for fun. Not," gesturing towards the IAAY program brochure, "*that.*"

Some of my daughter's friends expertly apply makeup to look years older. I'm told this is simply "what kids do." The friends don't know that my daughter is years ahead in math — in their lives, math is not done for enjoyment, only for torture. And when some of them gather to play, one girl always comments on my daughter's reading, digging, digging, about how much, how fast, she reads, how difficult the material.

And yet, how desperately parents want their children to be "gifted." A teacher told me about a father's introduction to her at the school's open house. "He slammed his fist on the table and said, 'My kid's going to Harvard. I want every

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The Myth

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gifted service you've got.'" His child's grade level? Kindergarten.

I call them the "gifted wannabes." If a child is smarter, doesn't he have more? Isn't more better? Isn't better elite? At the same time, how brilliance is resented, perhaps because brain power is one thing you can't buy.

A veteran Colorado teacher and staff development gifted specialist commented that among teachers and principals who feel negatively about gifted education, "there is lots of concern that education differentiated for gifted children is elitist. They're afraid these children are going to get something the others are not."

Concerns about elitism have deep roots in this country. Kearney explained it this way, "The cry of elitism first came out of socio-economic and racial concerns. Historically, this has been an issue; you see it in some of the literature as early as the 1920s, when school programs for the gifted started. Then, there was not such an emphasis on racial issues as much as concerns about establishing any kind of a meritocracy. Over the past 100 years, there has always been this kind of push-pull between equity and excellence."

Out of social and political protest, the practice of assigning children to regimented learning groups, or "tracking," was dismantled. It gave way to heterogeneous classes, simplified textbooks (Radin, 1991), shifts in what we believe children should learn (Gagnon, 1995), collaborative learning and a belief that every student should move through a subject at the same pace.

The result? SAT scores among the college bound are lower (Singal, 1995). Longitudinal studies point to many gifted adults, particularly women, in jobs and lives well below the potential of the gifted people living them (Kerr, 1994).

Does this mean educators have succeeded in cutting gifted kids down to size?

Kearney says she thinks so. "I don't think you'll find any stated philosophy anywhere in a school that says that, but I think that you may find plenty of people who perhaps, under the surface, feel that way. Certainly it's true that things in schools are much worse for gifted children now than they have been for quite a while because of the prevailing approaches and philosophies." Gifted children learn fast about this reality. One mother tells of an exchange with her gifted son: "That's not your best writing." "No, but it's 2nd-grade writing," he said and refused to change it.

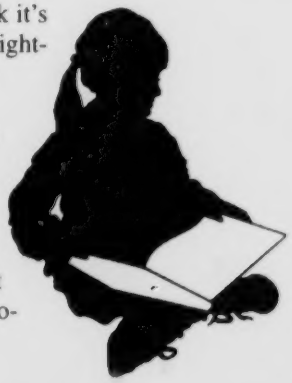
An 11-year-old profoundly gifted girl I know recently wrote to me: "Most of the time at school, my brain works on too high a level for my friends to understand. If I told them what I've been musing over, they'd think I was speaking Martian. It would be just as bad to talk about, say, my scores on the SATs — everyone would think me a snotty, stuck-up jerk if I told them I got a 1430!"

Not just different, not just smart, but a snob, a "stuck-up jerk."

Where do these ideas come from? How do they move into the philosophies and practices of education? No one I spoke to had answers.

So what are the solutions?

Kearney describes a booming homeschool movement. "A huge number of kids who are leaving schools right now are gifted kids," she reports. "I think in many cases, the schools are glad to have the kids, and their parents, gone. Sometimes they'll even admit it. To me, it's that sort of attitude that makes the talk about inclusion very hollow. It used to be, a century ago, children who were born with severe mental retardation or relatively mild disabilities were kept away from school, home and hidden in closets. I think it's really ironic that 100 years later, it's the brightest kids who are hidden away."



Kearney and Wright have talked about the need for teacher education. Other educational experts call for content reform (Gagnon 1995). Wright points out that children should be in a school where their needs are going to be best met, adding that the parents' role is that of their child's advocate.

Kearney goes further. "We need to lobby congress for a federal mandate for education of the gifted that will be similar to Public Law 94-142, the requirement that every school provide a free and appropriate public education to disabled kids. Gifted kids are the only

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The Myth

continued

group of exceptional children that has no federal protection for an appropriate education. I'm done thinking that permissive funding is going do it," she said. "I'm done thinking that state mandates are going do it; I'm done thinking that chatting is going to do it. In 100 years of gifted education I don't see any of these alternatives working."

In the meantime, teachers and parents keep helping others see things differently. "I don't much like labels," said the Colorado teacher. "Sometimes you need them so you can do some program planning. But labels set up a preconceived notion of a solution. You start looking for the label so you can match it to the right solution. Where's the child in this? If you only see the child as a label, it becomes political. This isn't about politics or philosophy. It has to be about the child."

A New York teacher who worked with a highly gifted child for the first time in her career described it this way: "Schools are always talking about assessment. With this student, it was just deeper than that. There wasn't anything I could assess. It's who he was, always wanting to learn, always wanting to absorb, for himself. Having to build on whatever we did in class — he *needed* to do that. You always want your students to be empowered to learn, to feel confident, but who really does it? He did. My colleagues would say, 'Give him a project,' but the projects, the suggestions — they weren't working. I kept looking at the kid. With some things he had been stretched all the way. He'd look at me like, 'why are we doing this?' I couldn't let him walk out at the end of the day upset and disappointed. I had to dig deeper. And I had to do what I thought was right, in my gut. My colleagues, they didn't get it. Until you've seen it, lived it, I don't think you get it."

Last night, as I was tucking her in, my daughter asked what I was writing. I told her I was thinking about how the Declaration of Independence says that all people are created equal, but how sometimes it seems schools are afraid to accept that people can be different, because then they wouldn't be equal. She pulled the sheet up to her chin and lay quietly. Then she spoke. "I think people *are* created equal. Everybody needs something, just not the same thing. That's equal."

And that is a sweet, sweet dream.❖

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Book Bag

• ***Teaching Young Gifted Children in the Regular Classroom: Identifying, Nurturing, and Challenging Ages 4-9.*** **Joan Franklin Smutny, Sally Yahnke Walker and Elizabeth A. Meckstroth. Minneapolis: Free Spirit Publishing, 1997; ISBN 1-57542-017-1. 230 pp.**
This useful volume provides teachers with an overview of the young gifted child and the needs such a child might present in the regular classroom. Chapters on compacting curriculum, meeting emotional needs and addressing the needs of diverse populations, among others, make this a helpful tool for teachers of elementary aged children.

• ***The Young Gifted Child.*** **Edited by Joan Franklin Smutny. New Jersey: Hampton Press, 1998; ISBN 1-57273-109-5. 582 pp.**
This volume is packed with information from many experts in the field of giftedness. Beginning with identification of giftedness in infancy and moving on to parenting and education, this book is a welcome overview to the literature on giftedness and could be used by both parents and teachers alike.

• ***Mastery.*** **George Leonard. New York: The Penguin Group, 1992; ISBN 0-452-26756-0. 176 pp.**
Not a book specifically marketed for the gifted but certainly a helpful addition to the libraries of those struggling to teach perseverance to gifted children who hit a wall when learning becomes arduous. Leonard's many years of experience practicing the martial art of Aikido inform this volume. He clarifies reasons for sticking with a path and ways to be more effective in doing so. The chapter titled, "The Dabbler, the Obsessive and the Hacker" is particularly illuminating for parents of the gifted child.

• ***The Drama of the Gifted Child: The Search for the True Self.*** **Alice Miller. New York: Basic Books, 1981; ISBN 0-465-01691. 118 pp.**
This slender volume speaks eloquently about what can be lost when significant adults fail to respect the sensitivity of any child, but especially the child Miller calls, "the sensitive-alert." Such children are capable of understanding and complying with the needs of others to such an extent that they become cut off from their own authenticity.

• ***Children Above 180 IQ.*** **Leta Hollingworth. 1942. Reprint Edition, 1997. North Stratford, NH: Ayer ISBN 0-405-06467-5.**
This seminal work still stands as the best reference on the highly gifted. A well researched and comprehensive text, this is a must read for any parent with a highly gifted child. It should be required reading for all teachers. Historical data, case histories and notes on personality development will be particularly reassuring to those who have felt their children are out of sync — even in communities of the gifted. ❖

C.R.

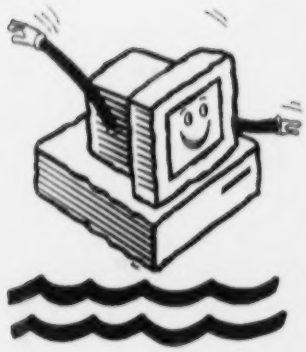
Surfing the Net

Sandra Berger

Recently, the media has been talking about the unusual weather conditions in the United States and predicting that this winter we can expect an unusual number of violent storms. When my grandson asked "What is a tornado?" I began thinking that focusing on weather as a science topic in this column might help answer some of the questions kids ask, usually late at night after the library is closed. The Internet is the perfect tool for this type of research. There are more information resources, lesson plans, virtual field trips and up-to-the-minute educational research available through the Internet than your library or school district will ever be able to provide.

Begin at the Beginning: Search Tools

Because I had a specific goal, my Internet research plan began with a visit to one of the larger search engines. But if I had no idea as to what I wanted, I would have used a directory like Yahoo instead of a search engine. The difference between search engines and directories is that search engines, such as Infoseek, Excite and Altavista, are based on computer programs that index all or most of the servers on the Web. Search engines are searchable by keyword and may allow for adv d (Boolean) searching using the Boolean operators AND, OR and NOT. With search engines, you enter search terms and retrieve (hopefully) a list of relevant documents or sites. Directories are collections of resources that are created by a human being rather than by a computer program. They may be general or subject specific, and may include a keyword search to their site only. With directories, you choose subject categories and subcategories related to your interest and follow links to appropriate documents or sites. Use a search engine when you have a focused topic and want to combine terms. Use a directory when you are new to the Net or not quite certain what you are searching for. A third type of searching resource, Online Libraries, consists of directories of directories or online databases and files. Usually, library collections are carefully chosen and evaluated by librarians who are concerned about the validity and quality of resources. The Librarians Index to the Internet *http://sunsite.berkeley.edu/InternetIndex/* is one example. Some of them, such as the Brittanica and the Argus Clearinghouse, rank sites by criteria you can find on their web sites. If you are interested in an in-depth analysis of search engines, directories and libraries, do an AltaVista *http://altavista.digital.com/* or an Infoseek *http://www.infoseek.com* search using the terms "search engines" and "compare." Some of the search engine instructions tell you to use a plus sign between terms (for example, search+engine), but I have better luck using quotation marks surrounding two-word phrases.



In an information-driven society and economy, information about information reigns supreme. Information retrieval is an essential skill in this age of terabytes of files and millions of computer servers. Internet search skills may be as important as knowing how to use a dictionary. There's even a Web page of Kids' Tools for Searching the Internet *http://www.rcls.org/ksearch.htm.* If you use the Internet and don't yet have search skills, pick a topic and play around with some of the search engines, directories and libraries. It's time well spent and a lot more fun than trying to figure out how to retrieve information late at night, when

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Surfing the Net
continued

your child announces that an important project is due the next day.

Next Steps: Finding information on Tornadoes
When I researched this topic, before using a search engine, I tried typing various URLs into my browser's text box at the top of the screen. First I tried *http://www.tornado.org*, and was transported to the home page of the Web Site of the United States Tornado Association and the Tornado Catamaran, the Olympic multi-hull sailing vessel. Next I typed *http://www.tornadoproject.com* and was rewarded with a site that was a wealth of information about tornadoes. But what about the major search engines? Infoseek is my favorite, but sometimes it provides more information than I have time to handle. For example, typing "tornado" generated more than 50,000 "hits," the term used to describe the number of requests from a Web browser for a single item from a Web server. 50,000 is an unmanageable number of pages to look at, but Infoseek and some of the other search engines allow you to refine your search by typing additional terms. I typed "education," which got rid of all but 37 tornado pages. That is a manageable number. Out of the 37, I found some useful and interesting information. A few of the super science sites I found are listed below.

* **Steps to Prepare a Science Fair Project**
http://www.isd77.k12.mn.us/resources/cf/steps.html

* **K-12 Curricula Enhancement Information and Resource Support Information Curricula and Other Materials** (NASA and Other Government Educational Information sites known for excellent science resources)
http://draco.scsu.edu/urls.html

* **Kids Links on the Web**
http://www.cbull.com/kids.htm

* **Teacher Resources**
http://www.mcs.net/~soledad/teacher.html

* **Science Education Resources (compiled by University of South Dakota)**
http://www.usd.edu/intec/science.html

* **An Interdisciplinary weather unit (a link on Science Education Resources)**
http://faldo.atmos.uiuc.edu/WEATHER/weather.html

* **Science and Technology -- Earth Science (Meteorology) Weather Centers**
(Links to the major weather centers in the U.S.)
http://www.webshed.com/center/scitech/earth_meteor_weather.htm

* **Eisenhower Regional Consortia for Mathematics and Science (funded by the U.S. Department of Education)**
Their mission, in part, is to 1) provide information and resources that may be time consuming to find elsewhere and
2) enhance educators' ability to teach mathematics and science. The full network is at *http://www.col-ed.org/smcnws/regcon.html*

* **The Science and Mathematics Consortium for Northwest Schools Internet-Based Lesson Plans and Resources for Students (SMCNS)**
(serves schools and agencies in Alaska, Idaho, Montana, Oregon and Washington) *http://www.col-ed.org/smcnws/msres/curriculum.html*

* **Science Resources, offered by the High Plains Consortium (HPC) (serves Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota and Wyoming)**
This site is linked to the Tornado Project, which I found by using my browser's "Find" command. *http://www.mcrel.org/connect/science.html*

* **The Why Files**
Explains the science, math and technology behind current headlines. Also includes science images and science-related sports information.
http://whyfiles.news.wisc.edu/

* **Al Bodzin's Home Page**
Selected links to a lot of "great sites" in biology, ecology, science and K-12 education.
http://www4.ncsu.edu/unity/users/a/ambodzin/public/home.htm

* **The Science Club**
Uses humor and science to get children and adults to learn and play together. This site includes an extensive "Ask Science Questions" digital

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reference service where kids and adults can get answers to their science questions. *http://www.halcyon.com/sciclub/*

A dictionary definition of tornado was obtained by visiting "Information Please" *http://www.infoplease.com/*. Information Please LLC provides this site, a cyber-ready reference library of information derived from its well known publications, including the "Random House College Dictionary" and a host of almanacs. Users can search or browse by topic.

If you would like a list of Internet Search Engines and information on the relative merits of each, send an e-mail request with "UOG-Search Engine" in the subject line to me at *sberger@inet.ed.gov*. Be sure to provide your e-mail address in the body of the message.

Indexes and Subject Guides

A visit to my favorite Indexes and Subject Guides demonstrated that information on tornadoes is available everywhere, but the quality of the information varies considerably. Try some of the Directories to search for something that interests you.

* **American Library Association** (search engine for subject area resources)
  http://www.ala.org
* **Argus Clearinghouse**
  http://www.clearinghouse.net/
* **E-BLAST: Brittanica Internet Guide**
  http://www.eBLAST.com/index.html
* **Eisenhower National Clearinghouse for Mathematics and Science Education**
  http://www.enc.org
* **Iconnect Curriculum Resources**
  http://www.ala.org/ICONN/socialst.html
* **InfoMINE-Scholarly Resources on the Net (NEW!)**
  http://lib-www.ucr.edu/
* **Kids Web--The Digital Library for K-12 Students**
  http://www.npac.syr.edu/textbook/kidsweb/
* **Librarians' Index to the Internet**
  http://sunsite.berkeley.edu/InternetIndex/
* **W3 Virtual Library**
  http://www.w3.org/

Unanswered Questions

When I finished locating Internet resources on tornadoes, I had some lingering questions that only a meteorologist could answer. Where could I find one? I simply used the Aska locator service at the ERIC Virtual Reference Desk (VRD) *http://www.vrd.org*. The VRD was established to connect the K-12 community to digital reference experts in all fields. At the heart of the site is the AskA+ Locator, a metapage that links to interactive ready reference sites in 21 subjects including arts, health, language arts, sciences, social studies and math. Each site is similar in that it takes questions in its field of expertise and answers those questions. Each site annotation contains author, audience and contact information, as well as a description of the service. The VRD had 3 resources listed under Meteorology: Ask Earth & Sky; Ask Jack and ScienceNet.

I also checked an index of periodicals called Publist *http://www.publist.com/about.html* to see if there were any Internet-based publications that discussed tornadoes. That led to the kids science magazine "Kids Discover," which again led to *http://www.tornadoproject.com.*

By the end of my search I could easily answer my grandson's question. If you are the parent or grandparent of a child who asks questions (is there any other kind?), then use the Internet search engines, directories, indexes and libraries, and you too will have the answers.

Wave if you see me surfing, and if you have favorite or just plain weird Web sites, send them along, and we'll print them in this column along with your name.

sberger@inet.ed.gov

The ideas expressed in this article are the author's, and do not necessarily represent the views of the CEC or ERIC Clearinghouse on Disabilities and Gifted Education.

The URLs were accurate and working when last checked. The Internet is a dynamic place, and changes take place rapidly and without the server, the server might be temporarily down or the URL might have changed. Try again later or truncate the URL.

Creative Ventures

Jerry Flack

Jack Meets Ben

On this journey into the world of creative ideas, Jack, an old friend from England, meets Benjamin Bloom, the author of a dynamic model for curriculum construction. The taxonomy of cognitive learning objectives, commonly referred to as "Bloom's Taxonomy" (Bloom, 1977), may be seen as "old hat" by many gifted educators. However, in this writer's view, it remains the single most effective and easily utilized curriculum model at educators' disposal to help students of all ages build strong knowledge structures and develop skills that will enable them to access, add to, utilize and evaluate information bases. Bloom's Taxonomy is especially effective when used in conjunction with inquiry teaching, developing critical thinking through questioning and problem-solving. Students who become effective in both asking and answering questions have greater opportunities to construct meaningful learning and to transfer learning from existing situations to new circumstances.

One of the greatest virtues of Bloom's Taxonomy is its simplicity. The model is uncomplicated and easily understood. Even primary-age students can comprehend the "hows" and "whys" of learning, and they can apply the taxonomy's basic principles to their own constructive learning. To be sure, there are models of curriculum design far more complicated than this one, but a legitimate question to using them is "Why bother?" Educators should not be so dazzled by curriculum models that they lose sight of the reality that such tools are only means to an end.

Lead by Benjamin Bloom of the University of Chicago, a group of college examiners seeking a means of exchanging ideas and materials without succumbing to the use of nebulous terminology, designed for their purposes a taxonomic hierarchy similar to taxonomies of the biological world which classify all living matter into phylum, class, order, family, genus and species. Educators have developed action verbs (Figure 1) representative of the six hierarchical levels of Bloom's Taxonomy: knowledge, comprehension, application, analysis, synthesis and evaluation. These verbs prove extremely handy as "stems" of questions teachers ask and teach their students to ask and as prompts in provoking both higher levels of thinking and greater sophistication in student products and projects.

Bloom's Taxonomy is an especially effective tool teachers can utilize to develop questions that move students to ever more powerful levels of cognition. Questions that follow this model as a guide move from basic knowledge and comprehension queries about content on through to investigations concerning structure and meaning. Knowledge and comprehension questions are excellent for checking basic student learning, but analysis and evaluation questions provide students with opportunities to use what they have learned to further extend their knowledge and understanding of the world. In addition, students familiar with using this system often come to recognize that they can structure their own learning to acquire, apply and analyze information and ultimately create new knowledge.

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Figure 1

BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES COGNITIVE DOMAIN

Knowledge	**Comprehension**	**Application**
Define	Discuss	Illustrate
List	Explain	Demonstrate
Recall	Review	Draw
Name	Report	Sketch
Identify	Predict	Show
Analysis	**Synthesis**	**Evaluation**
Analyze	Create	Judge
Experiment	Design	Compare
Contrast	Construct	Conclude
Diagram	Compose	Rate
Inspect	Propose	Select

One especially effective way to introduce Bloom's Taxonomy and its operations to students is through the use of fairy tales. *Jack and the Beanstalk* prompts (Figure 2) illustrate to students how the use of this system can contribute to their greater understanding.

Questioning Strategies

Teachers can begin with a literal text question such as "How many times does Jack climb the beanstalk?" Thoughtful teachers, however, may approach a discussion of the tale with a more inferentially-based question: "Why do

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Figure 2

BLOOM'S TAXONOMY APPLIED TO *JACK AND THE BEANSTALK*

Knowledge
- Name three important characters in *Jack and the Beanstalk.*
- Order these four objects in the sequence in which they appear in the story, first to last: bags of gold/magic hen/golden harp/magic beans.
- Recall the number of times Jack climbs the magic beanstalk.
- Repeat the Ogre's famous four-line speech indicating that he senses Jack's presence in his castle. It begins, "Fee-Fi-....."

Comprehension
- Explain how it is that Jack returns home from market with five magic beans.
- Discuss Jack's reasons for climbing the beanstalk more than once.
- Draw a picture of what you think Jack's cottage looked like from the height of the top of the beanstalk.
- Illustrate in cartoon fashion the sequence of events which occur on Jack's first trip up the beanstalk.

Application
- Paint a scene of a room in the Giant's castle (especially one not shown in a book).
- Dramatize a scene between any two characters appearing in *Jack and the Beanstalk.*
- Write a journal entry Jack (or his mother) might have written the night he came home from the market with only five beans.
- Create a poster the Ogre might make to warn English boys to stay off his property.

Analysis
- Analyze the popularity of *Jack and the Beanstalk.* What characteristics or elements contribute to its enduring appeal?
- Differentiate between *Jack and the Beanstalk* and another popular English fairy tale such as *Goldilocks and the Three Bears.* In what ways are they similar? Different?
- Compare and contrast the opinions Jack's mother has of her son before and after he climbs the beanstalk.

Synthesis
- Imagine a sequel to the traditional story of *Jack and the Beanstalk* in which listeners or readers learn what became of "Milky-White" and the old man who traded Jack five beans for her.
- Propose a solution for Jack and his mother. What are they to do with the giant's remains in their backyard?
- Predict what life in the future will be like for Jack and his mother now that they have not only sustenance but wealth.

Evaluation
- Rate *Jack and the Beanstalk* against several other classic fairy tales such as *Little Red Riding Hood* or *Sleeping Beauty.* How does it stack up? What criteria may be used to compare various fairy tales?
- Judge the effectiveness of the ending of *Jack and the Beanstalk.* Is the Ogre's demise the best way to conclude the tale? What are some other alternatives?
- Decide if the portrayal of Jack's mother is "fair." What reasoning can be provided to support that conclusion?

Creative Ventures

continued

you suppose storytellers have Jack climb the beanstalk three times?" This question asks for a much more sophisticated level of thinking and responding. Questions of application and synthesis, which vault beyond the text, may also be used in reading discussions. An application question might query students with regards to alternative actions that Jack might have taken. For example, "Can you imagine another way Jack might have kept the giant from climbing down the beanstalk?"

Ultimately, students should become good questioners themselves. Good teaching involves showing children how to ask questions that help them focus on what they want to learn, what they need to know and how they can access information to fulfill their learning needs. Here is a suggestion for accomplishing that end. Place one or more items found in or associated with *Jack and the Beanstalk* in a box, close the box and wrap it in colorful paper. Show the box to students and encourage them to shake it, feel its weight, and attempt to discern what the box contains through the use of questions. Tell students that you will only answer "Yes" or "No," so their questions must be phrased accordingly. On the first try, place five dry beans in the box. Students have up to 20 questions to discover what is in the box. When students know they are allowed only 20 questions, they cannot afford to squander any and are encouraged to develop strategies which limit the possibilities.

Wise teachers also infuse some creative questioning strategies into their teaching practices. Convergent questions require one correct answer, while creative questions accentuate divergent thinking. A sample convergent question is, "What does Jack's mother do with the magic beans when he first brings them home from market?" Divergent thinking questions anticipate myriad answers, all of which are "correct." What if...? questions represent one type of creative questioning. Sample divergent questions from *Jack and the Beanstalk* are: "What if Jack's mother had cooked the beans? What might the result(s) have been?" "What if Jack had told the giant of his and his mother's sad plight on his first trip up the beanstalk?" "What if Jack had traded "Milky-White" for carrot seeds instead of beans?" "What if the axe had not been handy?"

Both critical thinking and creative thinking questions can stimulate the imaginations of students and fuel their curiosity. Students can draw conclusions, make predictions, and perform evaluations from all levels of Bloom's Taxonomy when answering thoughtful questions. Questions cost nothing but yield wonderful and powerful returns in the development of talent and thinking skills. ❖

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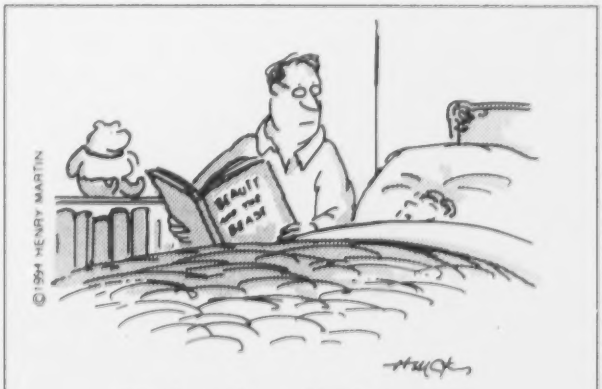

"You know, this would make an excellent screen play or Broadway musical."

Jack and The Beanstalk Resources

Authors such as Susan Pearson and Steven Kellogg give the old English story a straight-forward retelling, while others creatively stamp their own imprint upon the tale. James Still sets his delightful American version, *Jack and the Wonder Beans*, in the mountain country of Appalachia as is evident from the very first words: "Way back yonder" replaces "Once upon a time." Jim Harris provides a distinctly western flavor to the tale in *Jack and the Giant: A Story Full of Beans*. Harris places Jack in the American West and uses a bunch of giant rustlers as the villains. The way Harris tells it, there is a singing banjo and a buffalo that produces real gold buffalo chips. Brian and Rebecca Wildsmith use the familiar story line to create a contemporary ecological fable, *Jack and the Meanstalk*. When humanity, personified by Professor Jack, a scientist, fools with Mother Nature and creates an out-of-control beanstalk, the animals of the earth come to the rescue. Some authors place the giant or ogre in a more favorable light. In Steck-Vaughn's "Another Point of View" series of fairy tale books, Alvin Granowsky (1996) tells the traditional story of *Jack and the Beanstalk* but does not conclude the tale with Jack's axing of the beanstalk. At that juncture of the story, readers flip the book over and begin reading again, this time the new tale being titled, "Giants Have Feelings, Too." In the alternate version, the giant's wife gives her interpretation of the story's events. Jack was no the innocent lad he is made out to be. *Jim and the Beanstalk* is another creative twist on this classic story. In Raymond Briggs' clever tale, Jim proves to be a helpful lad to the giant. The reason for the giant's bad humor can be found in the infirmities of old age, his having grown bald and having bad teeth and poor vision. Jim does not take from the giant, but rather gives him a new wig, eye glasses and dentures. The result is a delightful friendship between the two characters. Of course, the lesson to be learned is one of helping people and caring for their needs.

Net Surfers will want to visit "The Jack and the Beanstalk and Jack and the Giant-Killer Project" at the University of Southern Mississippi. Patterned after the earlier "Cinderella Project," students can view historical versions of Jack's tale from the 19th and early 20th centuries. They can see how an 1820 version uses Jack's story to show how books were made then and discover a board game that accompanies an 1860 version of *Jack and The Beanstalk*.
http://wwwdept.usm.edu/~engdept/jack/jackhome.html

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J.F.

Above & Beyond

Susan Winebrenner

Advocating for the Curriculum Needs of Gifted Students

Many of you have read guidelines for effective curriculum methods and content for gifted students. Now, the critical question is, "How can I intervene effectively with my child's teachers to convince them to provide what my child needs regarding her curriculum?" I suggest, and/or reemphasize from previous columns, some proven, effective types of reasoning that may influence your child's teachers to challenge her, including specific suggestions for expectations for students in need of greater challenge.

Carol Morreale, QUEST coordinator in Lake Forest, Illinois, proposes simply that we ask for "an equal opportunity to struggle." Teachers support the notion that students come to school to learn. Advocates for gifted students can discuss what it means to learn, rather than just being taught. All students have a right to work at their personal challenge level so they can learn the vital survival skills needed when one does *not* know how to solve a problem or locate correct information. Since gifted youngsters are often advanced two to three years beyond their age peers, too often "regular curriculum" cannot provide the necessary challenge.

During my talks to parents and teachers, I always tell them that the students in their homes and schools I worry about most are those breezing through school receiving high grades with little or no effort. Many of those kids will be totally unprepared for the challenge of finding out the perfection they seek does not come so easily in college. I've asked before: where do we want these kids we care for to be the first time they have to struggle to do well? I'd much rather have them in our K-12 school system, surrounded by supportive teachers and parents, than alone in some freshman dorm wondering if they will still be acceptable to themselves and others when the world discovers they are no longer able to get high grades. They must be able to celebrate the joy of hard work.

Ask the principal or your child's classroom teacher to share with you the school's mission statement. Find the phrase that promises something like, "All of our students will be encouraged to reach their highest potential in learning." Ask for evidence that your child is reaching his highest potential. Ask for and expect that whatever is promised as a school goal should certainly be available to students who need a differentiated curriculum to experience that challenge to their potential.

Be clear about what your child needs. Ask for consistent opportunities for students to demonstrate prior mastery before curriculum is taught. This is especially vital when schools are preparing students for state or standardized tests. Most gifted students don't need any review to be able to demonstrate competence with expected standards or benchmarks. Ask that opportunities be made available for students who can demonstrate mastery without "doing all the work" to spend their learning time on projects and activities that extend their learning and maintain their positive attitude about school.

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***Susan Winebrenner**, from Michigan, presents workshops on a variety of topics, but her first love is teaching gifted children. She is the author of Teaching Gifted Kids in the Regular Classroom and Teaching Gifted Kids with Learning Disabilities in the Regular Classroom.*

Above & Beyond

continued

Advocate at your state level for teacher preparation programs to include mandatory classes in how to teach gifted students. Presently, fewer than 10 states expect their educators to take any specific courses in this area. It's ridiculous to expect teachers to know how to meet the advanced needs of gifted students when they have no training in that area. Point out that some course work in how to teach students in special education is mandatory in almost every state in this country.

Be aware that when special education students are "mainstreamed," special education teachers are expected to provide coaching and support to the regular classroom teachers regarding appropriate curriculum modifications for those students. Insist that teachers of mainstreamed gifted students need similar support.

Know the research that demonstrates that gifted students must be grouped with others of similar ability on a regular basis to feel secure enough to show their talents (Kulik & Kulik, 1990). Become knowledgeable about the practice of cluster grouping, in which gifted students are purposefully clustered into otherwise heterogeneous classrooms, rather than being purposefully split up so that each class will have one or two of them (Winebrenner & Devlin).

Find out how you can support your state organization for gifted education. If your state has Educational Service Centers or similar agencies that promote staff development, a representative from that agency should be able to help you contact state organizations. They always need members who can help them carry out their goals of advocacy; don't let someone else do it for you! In districts and states where parental advocacy is strong, services for gifted students are alive and well. The strength of parent advocacy for special education is legendary and effective. We should be able to emulate that strength to get what our kids need:

> *To stretch their minds and learn,*
> *To feel OK just the way they are; to not have to pretend to be "normal" or "average,"*
> *To be free from discrimination in exactly the same way our country promises and delivers freedom from discrimination to any other "minority group,"*
> *To enjoy school so that lifelong learning is a joyous prospect.* ❖

References

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Winebrenner, S. & Devlin, B. Cluster grouping of gifted students: *How to provide full time services on a part time budget*.ERIC Digest EDO–EC–95–1.

E-MATH: A Guide to E-mail Based Volunteer Programs Designed to Help Students Master Challenging Mathematics, Science and Technology was recently published by the U.S. Department of Education http://www.ed.gov/pubs/emath/. If you have difficulty with this URL, go to www.ed.gov and use their search engine. Just click on "search," and type "E-Math."

S.B.

Gifted CDs: The Best Titles for Your Children

Gregory C. Pattridge

Walking into your nearest software store can be an exercise in futility. Hundreds of boxes await your evaluation and scrutiny. The blank stares of other customers is an indication you are not alone in this dilemma. Educational software purchasers share the same concern: What title is going to entertain, educate and challenge my child beyond the initial day of purchase? Fortunately, help is at hand!

The thousands of available educational CD-ROMs have always been in desperate need of criteria that can be used to evaluate their worthiness. I developed criteria for the specific purpose of helping myself and others buy software titles that would not be collecting dust after the first month of use. The initial requirements set up proved to be too stringent, as I found few titles that matched the five criteria. The list that follows contains CD-ROMs that meet at least four out of the five requirements. I hope both the criteria and the list will help you become a better consumer in the overwhelming world of educational software.

Criteria For Finding the Best CD-ROM Titles

1. Wide Range of Levels

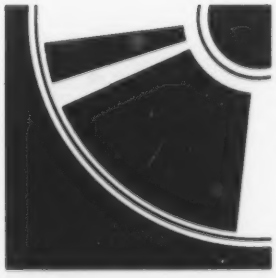
Software is expensive, and you would like a title to be enjoyed for many years. I look for a minimum of a five-year range and hope that use can extend into adulthood. The perfect title is one that both you and your children can enjoy separately and together.

2. Teaches Curriculum Standards

Material that is challenging and teaches some aspect of curriculum is important. Many titles claim to be educational but only succeed at being fast paced arcade games.

3. Develops Higher Level Thinking Skills

Software should challenge the student and not merely request answers to knowledge-based questions. Expanding the already high-level thinking skills of the gifted youngster is an accomplishment rarely found in today's software market.



4. Requires Outside Research/Decision Making

The student should be encouraged and motivated to do research away from the software program. This may be in textbooks or on the Internet.

5. Provides Extensive Feedback

Good teachers always provide continuous verbal reinforcement for learning. The computer program should also provide feedback to let students know they are on the right track.

The Best in CD-ROM for Gifted Children

A.D.A.M. THE INSIDE STORY CLASSIC
(A.D.A.M. SOFTWARE) ages 10 - adult

A great title for all those future doctors. Detailed color illustrations let you peel away one layer of the body at a time and see various bodily functions. Interactive puzzles allow the user to piece together bones and muscles. Lots of medical information is learned in an entertaining for-

- continued on next page

***Gregory C. Pattridge** is a teacher on special assignment in the Gifted and Talented Office of Jefferson County Schools in Colorado. He also teaches for Lesley College and University of Phoenix.*

Gifted CDs

continued

mat. (Mac/Windows)

AMAZON TRAIL CLASSIC
(THE LEANING COMPANY)
ages 10 - adult

One of the best in the series of "Trail" classics. Students will need reading and high-level thinking skills to reach the Incan King and solve the mission. (Mac/Windows)

HYPERSTUDIO
(ROGER WAGNER)
ages 8 - adult

Create multimedia book reports and presentations. Programming architecture is not as advanced, but most users will be satisfied with the results they can achieve. (Mac/Windows)

INCREDIBLE MACHINE 3
(SIERRA ONLINE)
ages 8 - adult

Clever graphics in this invention-construction kit make it a worthwhile choice. 150 puzzles vary in difficulty and meet many present science standards. (Mac/Windows)

OREGON TRAIL: 3RD EDITION
(THE LEARNING COMPANY)
ages 10 - adult

The latest version of this classic is more realistic than ever. With more features and information, users have increased options for surviving their journey on the trail. Highly recommended. (Mac/Windows)

THE LOST MIND OF DR. BRAIN
(SIERRA ONLINE)
ages 12 - adult

Help Dr. Brain retrieve his laboratory in this addicting and challenging program. Stretches logical thinking skills to their limits. The original basis for this program is Howard Gardner's Seven Intelligences. (Mac/Windows)

SIM SAFARI
(MAXIS) ages 8 - adult

A simulation game set in a wildlife park in an African Savannah. Managers must balance the food web, educate and deal with tourists and interact successfully with locals. Difficulty levels provide challenge for various users. (PC CD-ROM)

SMART GAMES PUZZLE CHALLENGE 2
(SMART GAMES, INC.) ages 12 - adult

20 types of challenges are included in this great collection. There are 1400 different puzzles to test your skills in strategy, logic and trivia. Boredom will never set in with the variety offered from this interactive piece of software. (Windows)

THINKIN' THINGS COLLECTION 3
(EDMARK) ages 7 - 12

A great title to help develop and expand critical thinking skills. Challenge levels can be adjusted for various users in the five activities. Explore being a stockbroker, an artist, a detective or a computer programmer. (Mac/Windows)

THINKIN' THINGS: SKY ISLAND MYSTERIES
(EDMARK) ages 8 - 12

Excellent new title in this series. The setting is an island in the sky, and the player becomes a detective to solve 14 different mysteries. Solving Puzzles is the only way to get clues. Critical thinking and problem-solving skills emphasized. (Mac/Windows)

THE TIME WARP OF DR. BRAIN
(SIERRA ONLINE) ages 12 - adult

A sequel to "The Lost Mind of Dr. Brain," with a similar format and emphasis. This time a user must solve puzzles to bring Dr. Brain back to the present. Based again on Gardner's Seven Intelligences. (Mac/Windows)

3D BODY ADVENTURE
(KNOWLEDGE ADVENTURE) ages 7 - adult

Very extensive collection of human body information. Excellent graphics and interactive games make this title a winner for any future doctor. (Mac/Windows)

WHERE IN THE U.S.A. IS CARMEN SAN DIEGO?
WHERE IN TIME IS CARMEN SAN DIEGO?
WHERE IN THE WORLD IS CARMEN SAN DIEGO?
(BRODERBUND) ages 10 - adult

The three best titles in this popular series provide various settings and clues for solving a crime. Very interactive with lots of reasons to do outside research. I give the nod to "Where in Time is Carmen San Diego?" for its more in-depth approach. (Mac/Windows) ❖

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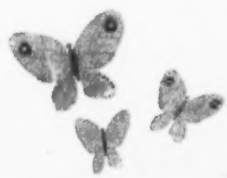

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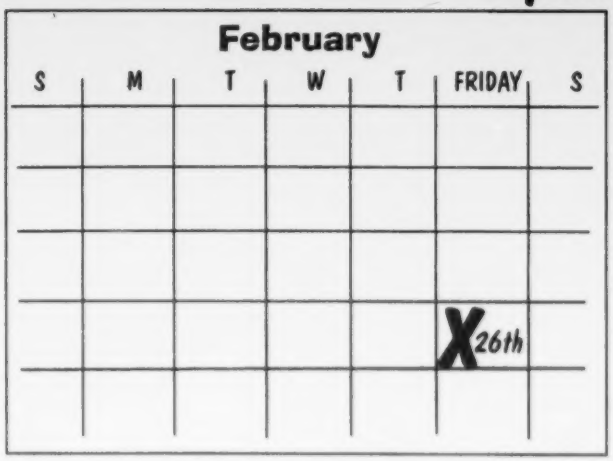

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